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### RHEUMATIC INFECTION IN CHILDHOOD: A SURVEY FROM THE CHILDREN'S HOSPITAL, MELBOURNE.

WITH AN ADDENDUM ON THE FOLLOW-UP SYSTEM OF THE ALMONERS OF THE HOSPITAL.

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RHEUMATIC infection is a serious and sometimes fatal disease in childhood, and its results are illustrated in many cases of cardiac disability in adult life. Its onset in the young may be insidious, and it is frequently overlooked because of the vague and indefinite nature of the symptomatology. This paper is a review of cases of rheumatic infection at the Children's Hospital, Melbourne, during the years 1936 to 1942 inclusive.

#### Incidence.

In this series there were 645 patients, of whom 345 or 53.5% were males and 300 or 46.5% of whom were females. Sixty case histories were omitted owing to uncertainty in the diagnosis. There were 167 cases of chorea (25.8%), and in 117 of these both acute rheumatic infection and chorea were present. There were 158 instances (24.49%) of recurrence of infection.

In the investigation conducted by the Central Board of Health of South Australia, reported in this journal on April 6, 1940,<sup>(1)</sup> a negligible sex difference was found, for of 450 patients admitted to the Children's Hospital, Adelaide, during the eleven-year period from 1928 to 1938, 224 were males and 226 were females. The incidence of chorea in children was greater in Adelaide, 35.5% being affected.

The incidence and distribution of acute rheumatism and rheumatic heart disease in New South Wales was reviewed in the issue of this journal dated March 13, 1937.<sup>(2)</sup> The histories of 428 children admitted to the Royal Alexandra Hospital for Children, Sydney, during ten years were analysed. Of the 428

children, 226 were males and 202 were females. There were only 24 cases of chorea.

H. Boyd Graham<sup>(3)</sup> refers to the figures from the Children's Hospital, Melbourne, in his review of rheumatic infections in Victoria. The average annual number of admissions for rheumatic fever for the five-year period to the end of 1936 was 87.6%, and for chorea, 28.2%.

In a review of juvenile rheumatism in London in 1939, P. S. Hench *et alii*<sup>(4)</sup> referred to rheumatic carditis as the commonest single cause of persistently irregular school attendance. It accounted for 26.7% of all children away from school for three months or longer in 1936. The Public Health Department of London listed as rheumatic 22,800 children aged under fifteen years, or 26% of the total child population of 878,000. But the severity of the incidence of the disease in London has now lessened, having decreased from 2.0% in 1928 to 0.77% in 1937, and there was a fall in the crude annual death rate from rheumatic fever and its sequelae in England from 67 per 1,000,000 persons in 1901 to 22 per 1,000,000 in 1937. In the United States of America<sup>(5)</sup> there are probably 1,000,000 persons with rheumatic carditis, and the disease causes up to 40,000 deaths annually.

#### Seasonal Incidence.

Table I, from the "Victorian Year Book for 1938-1939", shows the relation of temperature, humidity and rainfall to the seasons in the City of Melbourne. Table II shows the percentage of cases occurring in each season.

TABLE I.  
Average of Climatic Elements in Melbourne.

|   | Spring. | Summer. | Autumn. | Winter. |
|---|---------|---------|---------|---------|
| Mean temperature of air in shade (°F.) . . . . .  | 57.8    | 66.6    | 59.4    | 50.0    |
| Mean relative humidity (saturation 100) . . . . . | 65.0    | 60.0    | 69.0    | 75.0    |
| Mean rainfall in inches . . . . .                 | 7.20    | 5.97    | 6.65    | 5.83    |



TABLE II.

| Season.        | Percentage of Cases. |
|----------------|----------------------|
| Spring .. .. . | 23.33                |
| Summer .. .. . | 21.05                |
| Autumn .. .. . | 30.52                |
| Winter .. .. . | 25.10                |
| Total .. .. .  | 100.00               |

It will be seen from the two tables that the lowest incidence is in summer, when the relative humidity and rainfall are low.

#### Mortality Rate.

Forty-two deaths (6.5%) were recorded as the result of rheumatic infection directly or indirectly, one child having died following an accident. Four of these children died at other hospitals. In the Adelaide Children's Hospital figures<sup>(1)</sup> there were 19 deaths, or 4.69%, among 405 patients admitted with active juvenile rheumatism. These figures referred to those admitted in a first attack, or in whom a previous uncomplicated attack had occurred. Two children died of acute rheumatism combined with chorea, and no child died of chorea alone. In this series four children who died had both acute rheumatic infection and chorea. There was no death from chorea alone. In H. Boyd Graham's review<sup>(2)</sup> deaths due to rheumatic infection represented 2.03%. The New South Wales review referred to earlier, reports 8% of deaths in hospital. Poynton, as quoted in this article, gives the mortality rate in London as 13%.

#### Causes of Death.

The causes of death of the 38 children who died at the Children's Hospital, Melbourne, are set out in Table III.

TABLE III.

Showing the Cause of Death of Thirty-eight Children Suffering from Rheumatic Infection in the Children's Hospital, Melbourne.

| Cause of Death.  | Number of Patients. |
|--|---------------------|
| Rheumatic infection only (four with chorea) .. .. .                                    | 19                  |
| Rheumatic infection and pneumonia (one with mitral and aortic valve lesions) .. .. .   | 2                   |
| Rheumatic infection and scarlet fever .. .. .  | 1                   |
| Rheumatic infection and congestive cardiac failure .. .. .                             | 4                   |
| Rheumatic infection and auricular fibrillation with congestive cardiac failure .. .. . | 3                   |
| Rheumatic infection and pericarditis with .. .. .                                      |                     |
| (a) pneumonia .. .. .  | 3                   |
| (b) congestive cardiac failure .. .. .   | 3                   |
| (c) otitis media .. .. .   | 1                   |
| (d) acute nephritis .. .. .  | 1                   |
| Rheumatic infection and subacute bacterial endocarditis .. .. .                        | 1                   |
| Total .. .. .  | 38                  |

In the Adelaide Children's Hospital statistics cited above, of the 20 deaths mentioned, nine were due to cardiac failure, and four to pneumonia and cardiac failure. Three children died of congestive cardiac failure and the remaining four of cerebral hemorrhage, septicemia, pulmonary embolism and jaundice and choleraemia. In the New South Wales figures referred to above, the commonest cause of death was congestive failure following immediately after an acute attack.

H. Boyd Graham,<sup>(3)</sup> in his analysis of mortality statistics for Victoria for the years 1931 to 1935 inclusive, states that the average estimate of deaths was 337 per annum attributable to rheumatic infection. Of these 337 deaths, 179 referred to mitral valve lesions, 51 to acute rheumatic fever, and one to chorea. He estimates the incidence of rheumatic infections as the cause of death at 2.1% of the total deaths, equivalent to 204 deaths annually per million of the population.

#### Age of Onset.

The graph in Figure I shows the age of onset in the series. It will be seen that 16 of the cases occurred in children aged under five years, and the highest incidence was in those aged

over eight years. This is substantially in agreement with the Adelaide investigation,<sup>(1)</sup> in the report of which it is stated that the occurrence of juvenile rheumatism before the age of five years is not uncommon. In this series also it was found that the highest incidence of first attacks was between five and twelve years of age. The commonest age of onset at the Royal Alexandra Hospital for Children, Sydney, was between the ages of four and nine years.

In the American statistics the lower age groups are emphasized. Thus Wilson,<sup>(4)</sup> of New York, gives the following figures: under five years, 20%; five to eight years, 50%; over eight years, 25%. The incidence of acute rheumatism is generally recognized to be at its maximum during the school age, and Poynton,<sup>(5)</sup> quoted by Poynton and Schlesinger in "Recent Advances in the Study of Rheumatism",<sup>(7)</sup> in a study of one hundred consecutive patients aged under twelve years, obtained evidence of an initial attack before the fifth year in 12% of cases.

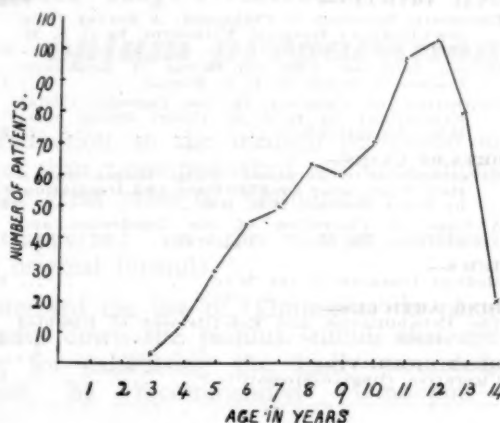


FIGURE I.

Showing the age incidence among 645 rheumatic children.

#### Symptoms and Signs.

The symptomatology was varied; a preponderance of patients exhibited "growing" and joint pains. This was the chief complaint in 390 cases, or 60.4%. There were 130 patients, or 20.15%, with polyarthritides. Subcutaneous nodes were found in 13 instances, or 2.01%. Sixty-five children, or 10.07%, complained of sore throat, presumably streptococcal in origin. There were no cases of erythema multiforme, and epistaxis occurred in 19 cases (2.94%).

#### Follow-Up System.

On being discharged from the wards, the patients are sent to the convalescent hospital, and when they leave the latter instructions are given for them to attend the out-patient rheumatic clinic. Thus an attempt is made to keep in touch with as many of the children as possible, and to supervise the completion of their period of convalescence by enjoining a stipulated period of rest during each day until physical signs of heart involvement have disappeared, or until it is determined that active life may be resumed with safety.

In this way 489 of the 645 patients in this series have been periodically examined at intervals varying from one week to six months, according to the cardiac condition found to be present. The remaining 156 children either ceased to attend or are untraced. In a few instances parents refused to bring their children for further examination. In 87 cases signs of cardiac damage were present at their last visit, and in 66 the heart sounds were normal. The condition of two is unknown, and one was killed in an accident, but no signs of cardiac involvement were detected at the last visit.

One hundred and fifty-seven patients were transferred to other metropolitan hospitals, to country hospitals or to private medical attendants. Of these, 53 are working or otherwise believed to be leading a normal life; 14 are still disabled and cannot lead an active life, and 83 are untraced, no report being available. Three were accepted as "Class A" in the fighting forces; but one of these developed a recurrence of rheumatic



infection while on service and was discharged. Four died at the hospital to which they had been transferred.

Of the 489 children who have attended the out-patient department periodically for examination and assessment, 315 have "residual" heart murmurs. In 174 children (35.57%) the heart appeared normal. Carditis and chorea occurred in 8.06%.

In a review of fifteen years' experience, up to 1939, of cases from the Children's Hospital, Philadelphia, Rachel Ash<sup>(8)</sup> found in 398 survivors of rheumatic infection 208 or 52.3% with signs of organic valvular disease, 48 or 12% with "doubtful" murmurs, 142 or 35.7% with no signs of heart damage, 22 with acute recurrences, and only 10 who were cardiac invalids. Her figure of 35.7% of undamaged hearts agrees strikingly with the percentage of 35.57 in the present series.

At the Royal Alexandra Hospital for Children, Sydney, 253 out of 428 children, or 59%, had cardiac involvement.

#### Clinical Manifestations.

Robbins and Durante<sup>(9)</sup> refer to the difficulty encountered in diagnosing mild cases of rheumatic fever. They state:

The joint manifestations that give a clue to the identity of the ailment are either absent altogether, or if present are as a rule mild and fleeting. In the more severe cases, where carditis is present, the diagnosis is ordinarily not hard to make.

The condition of the heart now being regarded as the most important feature of juvenile rheumatism, most attention has been paid to it. Early cardiac involvement has been assessed by displacement outwards of the apex beat, the presence or absence of a soft systolic murmur at the mitral area and the pulse rate.

It is now well recognized that rheumatic infection in childhood may occur without any clinical evidence of cardiac involvement, although the heart is probably affected to some degree in all cases. The term "carditis" has been extensively used to denote this, and is much to be preferred to the clumsy word "pancarditis".

The mitral orifice is primarily involved in all cases; but there is at least one report of aortic valve affection alone. Mitral regurgitation due probably to dilatation of the mitral valve ring is therefore deemed to be the initial lesion, and is denoted by an apical systolic murmur. In the acute phase of the disease this is a very soft bruit. Later, it may become rough or even harsh, but it never exhibits the musical character typically heard in congenital heart lesions. It may be conducted out to the axilla. This matter of conduction of the murmur is sometimes regarded as significant of permanent heart damage; but White<sup>(10)</sup> regards the question of conduction as being due in part at least to the loudness of the murmur. An early soft diastolic murmur is sometimes heard at or near the apex of the heart, and is usually localized. Poynton regards this murmur as due to aortic valve involvement, being conducted from the aortic area of the precordium. Owing to the fact that this bruit is variable in occurrence and is localized, it is difficult to accept this viewpoint. Further, aortic valve involvement is not common in juvenile rheumatism, and there is no evidence that children exhibiting this murmur are more prone to develop aortic incompetence. It is generally agreed that mitral stenosis, which may be accompanied by a mid-diastolic or late diastolic murmur, takes some months or even years to become fully established, and the cause of apical diastolic murmurs occurring early in rheumatic infection is still debatable. The early diastolic murmur is considered a useful sign in cases in which the degree of carditis is in question, for its presence indicates continued activity.

Amongst those children who survived with serious cardiac damage, there was a preponderance of "double" lesions. Thus there were twelve cases of mitral and aortic incompetence (1.8%), one of which was doubtful at the time of the last examination. Well-developed mitral stenosis occurred in eight instances (1.24%), in one of which some equivocal features were present.

There were only three cases of "pure" mitral regurgitation. Two of these were proved radiologically by definite enlargement of the heart shadow. In the third case no X-ray picture was taken, but clinical evidence was in favour of such a diagnosis.

Pericarditis was present in six cases (0.93%), in one of which it was accompanied by effusion.

Auricular fibrillation and gross cardiac failure were both uncommon. The former occurred twice, once with mitral stenosis, and the latter once only.

It is instructive to note that the Adelaide Children's Hospital figures<sup>(11)</sup> were similar with regard to the occurrence of mitral and aortic valvulitis, which was present in 1.5% of cases. Pericarditis, however, occurred in 3.3% of cases. No case of pure aortic lesion occurred in either series.

One patient with pure mitral stenosis had chorea, and one patient with aortic lesion and mitral involvement also had chorea and subsequently died.

#### Electrocardiography.

The electrocardiographic method of investigation is used as a routine measure in the rheumatic clinic whenever it is thought to be necessary. Of this form of investigation Poynton and Schlesinger<sup>(11)</sup> state that, although there have been no startling discoveries from its use, and although little has been added to existing knowledge of the course of the disease, it has underlined the frequency of cardiac involvement in the acute stages and furnished confirmatory evidence of existing ideas. It has been useful mainly to confirm the presence of and to analyse such irregularities as extrasystoles and auricular fibrillation, and to reveal right-sided preponderance of the ventricle.

#### Blood Sedimentation Rate.

The blood sedimentation rate has not been extensively used, but on occasions it has been of some assistance in helping to determine the degree of activity for the rheumatic infection. It appears to be especially useful for the nervous, highly strung child, whose pulse rate is not a good guide owing to its variability in diverse circumstances.

#### Radiology.

Radiology has been found most useful in determining the degree of involvement of the mitral valve. A barium bolus is administered, and its course is watched under the fluorescent screen. Any enlargement of the left auricle may usually be readily detected.

The X-ray film has not usually been employed in the acute stage, as the clinical signs of displacement outwards of the apex beat of the heart and the left border of that organ have been utilized for assessing cardiac involvement.

#### Treatment.

Professor W. T. Ritchie, of Edinburgh,<sup>(12)</sup> in referring to rheumatic carditis, made the following statement:

Rheumatic carditis is in many respects analogous to tuberculosis. The disease may be as quickly fatal as is miliary tuberculosis, or it may be a chronic process in which inflammatory fibrous tissue impairs the mechanical efficiency of the affected organ. A deeper insight into the nature and extent of visceral rheumatism indicates clearly that the cardinal principles in the treatment and management of patients affected by rheumatic carditis should be followed as strictly and ceaselessly as is customary in the case of those who suffer from tuberculosis.

In both wards and convalescent hospital the sleeping pulse rate has been recorded, along with the day (alert) rate and the temperature. After acute incidents have passed and the fever has subsided, the sleeping pulse rate is used as the most reliable guide to the degree of activity of the rheumatic infection, and it largely determines the time of getting up.

#### Length of Stay in Hospital, Including the Convalescent Hospital.

The time spent in hospital has been divided into four periods, as shown in Table IV.

TABLE IV.  
Showing Duration of Hospital Treatment for 645  
Rheumatic Children.

| Duration of Stay<br>in Hospital. | Percentage<br>of Patients. |
|----------------------------------|----------------------------|
| Under 3 months .. .. .           | 45.47                      |
| 3 to 5 months .. .. .            | 23.14                      |
| 6 to 8 months .. .. .            | 10.02                      |
| Over 8 months .. .. .            | 21.37                      |
| Total .. .. .                    | 100.00                     |

Stroud and Twaddle,<sup>(13)</sup> in an analysis of 685 juvenile cases of rheumatic heart disease extending over fifteen years at the Heart Hospital, Philadelphia, endeavoured to evaluate the ability to work in relation to the length of stay in hospital. Only first admissions were counted. Their figures show that the largest group of patients, 36.5%, spent three to five months in hospital, and 30.4% remained for a period of six to eight months. They concluded that it did not appear that a prolonged stay in hospital had materially increased the number of children who were active, nor had the death rate been reduced. They excluded those remaining in hospital for one to two months. Activity was denoted by attendance at school, working or unemployment.

Rachel Ash, in her review<sup>(14)</sup> of cases at the Children's Hospital, Philadelphia, reaches a different conclusion. She stresses the need for six months' absolute rest in bed, and cites the experience at Kensington, London, where bed rest for the stipulated period is held to have reduced heart disease among school children from 2% in 1926 to 0.8% in 1936.

The age incidence in the series here reviewed is higher than that of the American statistics, and if any inference may be drawn it would seem that the lower the age of onset of rheumatic infection, the longer it is necessary to confine the child to bed. It is reasonable, however, to postulate that each case should be judged on its merits, and that no rigid rule should be followed.

Wasson<sup>(14)</sup> puts in a very concise form the question of the degree of activity to be undertaken by convalescents from rheumatic fever. It is noted that "all children with a cardiac lesion should be barred from competitive sports, especially of an organized kind, such as team, basket and base ball games and swimming for speed. Once the principle of earnest competition enters, an average child would rather lose than quit. The desire to succeed or the fear of failure in sports is often too much of a strain on even a normal heart." Wasson also considers that the child should not be allowed out of bed until the temperature, leucocyte count, Schilling count and erythrocyte sedimentation rate are within normal limits. Certainly no child has been allowed to get up with a temperature above the normal; the sedimentation rate would also be affected by this, being a non-specific reaction. Leucocyte counts have not as a rule been made, and no great reliance is placed on such results by English authorities.

The question of the use of sodium salicylate in the treatment of acute rheumatism has been the subject of debate for a considerable time. There appears to be no doubt that the use of this drug alleviates the myalgia and joint pains and assists in reducing the temperature, which is rarely above 40° C. (104° F.). Its use as a routine form of therapy in the belief that it has some effect on the rheumatic process, whether this process is due to a virus or a streptococcus, or is an allergic reaction, is, however, almost certainly erroneous. This form of treatment should not be discontinued immediately on subsidence of the temperature and disappearance of the pains, but should be continued so long as clinical evidence points to its usefulness.

#### Summary and Conclusions.

1. Six hundred and forty-five cases of rheumatic infection occurring at the Children's Hospital, Melbourne, are examined and the mortality rate is shown.
2. In contrast to most statistics, there is a small preponderance of male patients.
3. The age incidence has been found to be slightly higher than the average.
4. The question of symptomatology and of the occurrence of carditis is discussed, together with investigational methods.
5. Reference is made to the problem of treatment, and its importance is stressed.

#### Acknowledgements.

I am indebted to Dr. H. Lawrence Stokes, the Honorary Physician in charge of the Rheumatic Clinic at the Children's Hospital, Melbourne, for permission to undertake this work, and for his assistance and advice.

The follow-up system, whereby all patients with rheumatic infection who have passed through the wards and convalescent hospital are referred by their respective attending honorary physicians to the out-patient rheumatic clinic, is due solely to the efforts of Dr. Stokes. His keenness and interest in this work have made possible the collection of the data on which this survey is based.

I wish to thank Dr. J. W. Grieve for his kindly encouragement and advice at all times.

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#### Addendum.

##### Description of the Follow-up System of the Almoner to the Hospital.

At the Children's Hospital, Melbourne, there is a comprehensive follow-up system, carried out by the almoner, for all sufferers from rheumatic fever or chorea.

A close daily watch is kept on admission slips, which give a provisional diagnosis for every child admitted to any ward in the hospital. A note is made of names, and after ascertaining from the ward sister that a certain child is a rheumatic, the almoner visits the home and discusses the social aspects of the disease with the mother, making sure she realizes the necessity for rest when her child returns home.

Full case histories are kept in the almoner's office, in which progress notes of contact with each family are recorded over the years. A social history sheet is made out after the initial home visit and sent to the ward, where it is attached to the rheumatic and ward history. This follows the child wherever he or she may go, and is brought up to date if home conditions change. It may influence the medical officer, so that a child from a poor home will be kept in hospital or in the convalescent ward for a longer period than a child who has a better home environment.

If there is any special problem to be settled at home—and this is noted on the social history sheet—the almoner is consulted before a child is discharged. Sometimes temporary admission to an institution or a foster home has to be arranged.

When a child is well enough to leave the convalescent ward, the parent is given instructions by the sister about necessary rest, and an appointment is made for a time when the child is to attend the out-patient Saturday rheumatic clinic. An appointment book is kept for all rheumatic patients, and if a child fails to keep an appointment a printed reminder or letter is sent. If this fails to bring the defaulter, another home visit is made. Sometimes letters come back through the Dead Letter Office, and in such cases it is often possible to trace a child through the school, a note of which was made on the initial home visit. Headmasters willingly give a new address or information about a transfer to another district. School visits are sometimes made when a child is to return to school (or half a day and may play no games; this assures the full cooperation of school authorities).

An occasional out-patient rheumatic patient will have a mild setback and will be sent home to complete rest in bed. In such cases the doctor may ask the almoner to arrange for a district nurse to visit the home in order to keep a daily record of the pulse and temperature. If a child's heart is very badly damaged, an invalid pram is sometimes provided and correspondence lessons or handicrafts are arranged. The almoner's library is very popular amongst the rheumatic patients.

When a rheumatic patient reaches the age of fourteen years, he or she is transferred to an adult hospital. As well as a medical history following that child, a social history is sent by the almoner to the almoner in the adult hospital. In this way, only a small percentage of rheumatic patients become permanently lost.

# HUMAN INFECTION WITH THE VIRUS OF NEWCASTLE DISEASE OF FOWLS.<sup>1</sup>

By F. M. BURNET.

From the Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne.

It was recently reported that the virus of Newcastle disease of fowls shows a number of close resemblances to the human influenza viruses A and B (Burnet<sup>(1)</sup>). It becomes of interest therefore to report the occurrence of an accidental laboratory infection with this virus as indicating its potential human pathogenicity.

Newcastle disease is an acute, highly infectious and highly fatal disease of fowls. It is enzootic in parts of India, Japan, the Philippine Islands and the Netherlands East Indies, and occasional outbreaks have occurred in other parts of the world including England and Australia. Our strain was isolated by Dr. H. E. Albiston from the Victorian outbreak in 1931 (Albiston and Gorrie<sup>(2)</sup>).

The virus was first studied by Doyle in 1927,<sup>(3)</sup> and later by Burnet and Ferry in 1934.<sup>(4)</sup> Its resemblances to the influenza viruses may be stated as follows. (i) It is of the same particle size (90 to 120 mμ), and shows a similar low resistance to such surface active agents as sodium desoxycholate and saponin (Burnet and Lush<sup>(5)</sup>). (ii) It multiplies freely in the chick embryo, producing lesions similar to those of fully adapted influenza virus strains. (iii) Multiplication results from inoculation into the allantoic cavity producing high titre fluid. (iv) Such fluid shows power to agglutinate almost the same types of red cells as are susceptible to influenza virus strains. (v) Large doses of virus produce influenza-like pulmonary consolidation in mice.

The more important differences between this virus and the influenza viruses are (i) the characteristic pathogenicity for adult fowls with septicemic as well as superficial mucous membrane infection, and (ii) the failure to produce specific antibody after intranasal inoculation in mice.

## Report of a Case.

The present infection was the result of a fairly large amount of highly infectious allantoic fluid being squirted from an egg into the right eye. The egg had been inoculated allantoically with material containing both Newcastle disease virus and influenza B in the course of experiments to detect possible "blockade" effects between the two viruses. The embryo was known to be dead (by candling) and the egg was lightly flamed as a preliminary to opening. The Bunsen flame was inadvertently turned on to the air space end of the egg, and the sudden rise in pressure forced out the infected allantoic fluid in a brief, powerful spurt. The eye was washed out with tap water and saline solution, but no antiseptic was used. The embryo was dead with typical Newcastle disease lesions; the fluid agglutinated red cells and was inactivated by Newcastle disease rabbit immune serum. In all probability small amounts of influenza B virus were also present; but as the experiment in question did not call for the establishment of this fact, fluids were discarded as soon as the desired information was obtained.

The following morning (December 17, 1942) the eye was severely inflamed. On this morning examination by Captain William Gernon, Medical Corps, United States Army, revealed acute conjunctivitis. The palpebral conjunctiva of the right eye was acutely inflamed, thickened and beefy red in colour. The bulbar conjunctiva was similarly inflamed with some chemosis and there was a considerable amount of mucus in the cul-de-sac. The cornea was clear, with no evidence of ulceration. Examination with the hand slit lamp revealed no increase in cellular content of the anterior chamber, and the ocular tension was normal. The right preauricular lymph gland was swollen and tender. The left eye showed no evidence of inflammation.

In the evening of December 17 moderate general symptoms were present—headache, general discomfort and slight chills—but the temperature was not significantly raised, and the general symptoms had disappeared the following morning.

The acute inflammation began to subside after two days, and under local treatment along standard lines the condition had cleared up completely at the end of a week.

On December 20 a mild irritation developed in the left eye; but there was only slight injection of the palpebral and bulbar conjunctiva, and the condition did not develop further.

## Isolation of Virus from Conjunctiva.

On December 17 there was much mucus and free lachrymation occurred; about 0.25 cubic centimetre of fluid was collected with a pipette from the outer canthus. Examination of a smear of the pus revealed epithelial cells and leucocytes, with no bacteria and no inclusions of any sort. The turbid fluid collected from the conjunctival sac was added to five cubic centimetres of nutrient broth, a small amount of sterile quartz powder was added, and the cells were broken up by drawing the fluid repeatedly up and down a capillary pipette. The fluid was then filtered successively through sterile filter paper and through a gradocol membrane of an average pore diameter of 0.8μ. The original material on culture yielded a few aureus staphylococcal colonies; the filtrate was sterile.

Inoculated amniotically into four twelve-day chick embryos, the filtrate produced death with typical lesions of Newcastle disease within forty-four hours. Fluid from these embryos agglutinated fowl red cells, and the agglutination was inhibited specifically by anti-Newcastle disease virus immune serum. When this result was available, the original filtrate stored meanwhile in the refrigerator was diluted serially and inoculated allantoically into twelve-day chick embryos, three eggs being used for each dilution. After three days all embryos inoculated with dilutions 1:10 and 1:100 were dead, with specific hemorrhage and fluid showing red cell agglutination; embryos given 1:10<sup>3</sup> and 1:10<sup>4</sup> dilutions were alive, with fluids showing no agglutination. Since the original filtrate represented about a 1:20 dilution of tears from the infected eye, one can state that the tears after filtration were infective to a dilution of 1:2,000. There can, therefore, be no doubt that Newcastle disease virus was actively multiplying in the eye and must be presumed directly responsible for the infection.

## Antibody Response.

Antibody against Newcastle disease virus can be titrated *in vitro* by Hirst's method with fowl red blood cells and by at least two methods *in ovo*, serum-virus mixtures being inoculated either onto the chorio-allantois or into the allantoic cavity. Blood samples were taken on December 17, 1942, and on January 1, 1943; the serum was separated, inactivated and preserved without antiseptic in the refrigerator.

Hirst titrations against stock allantoic fluid virus were made with serum taken one, seven, sixteen and twenty-six days after infection. Very little inactivation was shown when the test was set up according to our usual technique, the red cells being added immediately after the serum-virus mixtures were made. Much more definite results were obtained if the serum and virus mixture was allowed to stand for two hours at 35° C. before fowl red cells were added. Table I shows the changes observed.

TABLE I.  
Development of Antibody (Hirst Method) after Infection with Newcastle Disease Virus.<sup>1</sup>

| Day after Infection when Serum was Taken. | Serum Dilution. |       |       |     |     | Titre. |
|---|-----------------|-------|-------|-----|-----|--------|
|   | 5               | 10    | 20    | 40  | 80  |        |
| 1 .. ..                                   | trace           | ±     | ++    | +++ | +++ | 8      |
| 7 .. ..                                   | —               | trace | ±     | +++ | +++ | 15     |
| 16 .. ..                                  | —               | —     | ±     | +++ | +++ | 25     |
| 26 .. ..                                  | —               | —     | trace | ±   | ++  | 30     |

<sup>1</sup> Newcastle disease stock virus, diluted 1:40, was added to the serum dilutions shown. The degree of agglutination of fowl cells is shown by the number of "+" signs.

Chorio-allantoic titrations gave more definite results, as shown in Table II. Undiluted serum was mixed with the virus dilutions shown, and 0.05 cubic centimetre of the mixtures was inoculated chorio-allantoically on four eggs each. Foci were counted after forty-four hours' incubation at 35°. Most of the embryos were then dead with specific hemorrhagic lesions.

These results represent a reduction in focal count to approximately 2% of the control. In another experiment a simple dilution of Newcastle disease virus gave the same value as mixtures with the first serum.

<sup>1</sup> Work carried out with the aid of grants for research on virus diseases from the National Health and Medical Research Council and from Mr. E. Alec Cato.



TABLE II.  
Neutralization Tests of Acute and Convalescent Serum by Chorio-allantoic Titration.<sup>1</sup>

| Type of Serum.                         | Newcastle Virus Dilutions. |   |                           |                 | Equivalent Titres.  |
|--|----------------------------|---|---------------------------|-----------------|---------------------|
|  | 10 <sup>4</sup>            | 10 <sup>5</sup>   | 10 <sup>6</sup>           | 10 <sup>7</sup> |                     |
| Acute (one day after infection)        |                            | 100 $\frac{+}{-}$ , $\frac{+}{-}$ , $\frac{+}{-}$ , $\frac{+}{-}$ | 24, 24, 15, $\frac{+}{-}$ | 3, 4, 0, 1      | 2 x 10 <sup>7</sup> |
| Convalescent (16 days after infection) | 41, 45, 36, 40             | 5, 6, 7, 1  |                           |                 | 4 x 10 <sup>5</sup> |

<sup>1</sup> Figures represent count of foci on each membrane; "+" indicates specific foci present, but no count possible.

In view of the possibility that influenza B may have been concerned in the infection, Hirst tests against that virus were also carried out. No trace of antibody rise was detected.

#### Summary and Discussion.

Although it must remain a possibility that the coexistence of influenza B virus in the inoculum in some way helped the establishment of infection, the evidence presented is sufficient to establish Newcastle disease virus as the agent responsible for an acute conjunctivitis with moderate symptoms of general toxemia in a human subject. It is doubtful whether the observation is of any practical importance, as Newcastle disease in fowls is rarely encountered outside of the endemic area in the Far East, and a heavy contamination produces only a trivial human illness. It is, however, of considerable interest that a virus which on other grounds is regarded as closely related to the human influenza viruses should be capable of producing an infection of a superficial mucosal surface in man.

#### Acknowledgement.

I am deeply indebted to Captain W. Gernon, of the United States Army Medical Corps, for providing the clinical details used in this note.

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#### EXTRACTION OF CATARACT IN ITS CAPSULE (TOTAL EXTRACTION).

By R. A. DE CASTRO BASTO, M.D., M.R.C.S., D.O.M.S.,  
Sydney.

THERE are two recognised methods for the extraction of cataract: (i) a method by which the cataractous lens is partially removed, the capsule and some remnants of lens matter being left behind (the so-called "classical" or "extracapsular" method); (ii) a method by which the cataractous lens is entirely removed together with its capsule (total extraction, also known as the "intracapsular" method).

The first method is the one usually employed by the majority of ophthalmic surgeons. It was devised by Daviel nearly 200 years ago, and was until recently the more popular method of operation. It suffers, however, from many inherent defects, the chief of which are the following: (i) the cataract has to be mature before it can be satisfactorily removed; (ii) the operation is usually followed by an "after" or "secondary" cataract, which requires one or more needling operations subsequently; (iii) the resulting visual acuity is not generally so good as might be expected. On the other hand, the method has many advocates, for the following reasons: (i) it is well

established by time (hence the term "classical"); (ii) it is easier to perform; (iii) it is supposedly a safer operation.

The second method is known as the method of "total" or "capsulo-lenticular" extraction, and as its name signifies, the cataract as well as its enveloping capsule is completely removed, the eye thus being left entirely free of any cataractous remnants. It can be appreciated therefore that it is the ideal method of operation. Its main advantages are the following: (i) it can be performed on immature as well as mature cataracts; (ii) no "after" or "secondary" cataract remains, which will require the subsequent operation of needling; (iii) the resulting vision is remarkably better than it is after the "classical" or "partial" extraction.

The main disadvantages claimed against the newer method are two: (i) it is more difficult and complicated to perform; (ii) because of the complete removal of the cataract with its capsule, the vitreous is supposedly more apt to escape. Statistics have proved, however, that the latter objection is not founded on facts, and that it is put forward only as a theoretical possibility.

An analysis of the first 40 consecutive cases in which this extraction has been performed by the writer in Sydney may be of interest. Of this number, 35 operations were total and five were partial. Thirty-one patients were women and nine men. The visual results in these 40 cases are as follows:

|  |    |
|--|----|
| $\frac{5}{8}$ vision                       | 2  |
| $\frac{6}{8}$ vision                       | 17 |
| $\frac{7}{8}$ vision                       | 3  |
| $\frac{10}{12}$ vision                     | 6  |
| $\frac{12}{12}$ and $\frac{20}{20}$ vision | 4  |
| $\frac{20}{20}$ vision and less            | 8  |

The patients who have  $\frac{5}{8}$  vision and better therefore amount to 22 and those with  $\frac{10}{12}$  vision and better to 28 of the 40 submitted to operation. Thirteen out of the 40 patients were found before the operation to be suffering from a pathological lesion of the eye. Of these, only three finally had less than  $\frac{20}{20}$  vision.

The following complications occurred during or after the operation: vitreous prolapse, ten cases; iris prolapse (late), two cases; keratitis, one case; detached choroid, one case; intraocular hæmorrhage, one case; iritis, two cases.

That the loss of vitreous is not a serious complication when the accident is properly handled is shown by the visual result obtained. In the present series there were ten cases of vitreous prolapse; the vision obtained in these cases is as follows:  $\frac{5}{8}$ , three cases;  $\frac{6}{8}$ , two cases;  $\frac{7}{8}$ , one case;  $\frac{10}{12}$ , one case;  $\frac{12}{12}$  and less, three cases.

It should be mentioned that of the forty patients forming the basis of this report, eight had degenerative changes in the vitreous which were evident before the operation; four of these patients had high myopia. In such cases, the vitreous being fluid, the chances of its escape are increased. The percentage of vitreous accidents in a series of cases cannot be taken at its face value, unless the state of the vitreous previous to the operation is also taken into consideration. On the other hand, its effect on the resulting visual acuity should be a better criterion in the estimation of the seriousness of the accident. It will be seen from the foregoing figures that, in spite of the prolapse, half the patients had excellent vision ( $\frac{7}{8}$  and  $\frac{10}{12}$ ), and 32 had fair vision ( $\frac{5}{8}$  or better).

Of the two patients who had had iritis, one was a diabetic and the other had a partial extraction. There were no cases

of intraocular inflammation or detachment of the retina, although some of the patients were reexamined twelve to eighteen months afterwards.

In a straightforward, uncomplicated case of total extraction, the time spent in hospital is from eight to ten days.

#### Reports of Cases.

The following cases are of special interest.

CASE VII.—A man, aged fifty-one years, had a complicated, mature cataract resulting from an attack of iridocyclitis previously. Old keratic precipitates were still visible. Total extraction with peripheral iridectomy was performed and the resulting vision was  $\frac{1}{8}$ . A partial extraction with the old technique would in all likelihood have provoked a flare-up of the old inflammation, and such cases were usually regarded as inoperable.

CASE IX.—A man, aged forty-three years, gave a history of a penetrating wound of the eyeball sixteen years earlier. He had a traumatic cataract with a thickened capsule. A thick corneo-scleral scar was present on the temporal side. A coloboma resulting from a large iridectomy, performed at this site at the time of the accident, was visible. In order to avoid another iridectomy superiorly, extraction by the lateral route was employed; the iridectomy incision already present was thus utilized. The total extraction was successful, and the resultant vision was  $\frac{1}{8}$ .

CASE XV.—A woman, aged sixty-eight years, had a posterior polar cataract with increased tension. She was myxodematous. Total extraction was performed and loss of vitreous occurred. Three days later two patches of keratitis were noticed without signs of active inflammation. The keratitis gradually spread over the whole cornea. Her vision was reduced to perception of hand movements. The origin of the keratitis was doubtful.

CASE XXXII.—A man, aged sixty-seven years, had bilateral cataracts, the left one mature, with very poor light projection, the right one immature, with good light projection. Total extraction with peripheral iridectomy was performed successfully on both eyes during the same session. No vitreous prolapse or other complication occurred during the operation. The resulting vision in the right eye was  $\frac{1}{8}$ , while that in the left eye was perception of hand movements on account of an old retinal detachment which became visible only after the extraction of the cataract.

The particular method employed in these operations was that known as the Stanculeanu-Knapp-Torok-Elschnig technique.

The new procedure has gradually superseded the so-called "classical" or partial extraction, particularly on the continent of Europe, just as the newer method of tonsillectomy by dissection has universally replaced the simpler but less perfect "guillotine" method.

Ten years' experience with the method has convinced the writer, as it has done many others who have adopted it, that it is the best and the most nearly perfect method for the extraction of a cataract.

#### Reports of Cases.

##### RECURRENCE OF A TERATOMA TESTIS ELEVEN AND A HALF YEARS AFTER ORCHIDECTOMY AND IRRADIATION.

By PERCY ZERMAN, M.B., B.S.,  
Captain, Australian Army Medical Corps,  
Australia.

#### Clinical Record.

A.C., aged twenty-four years, labourer, was admitted to the Launceston General Hospital on May 6, 1931. Two months before he had noticed a swelling of the right testicle, which caused him no pain. Shortly afterwards he had

injured the testicle while driving a motor-car, and after this the swelling increased in size. He denied having had venereal disease, and his previous health had been good. There were no other symptoms.

On examination, he appeared to be a healthy man. No abnormality was detected in the examination of the cardiovascular, pulmonary and central nervous systems. No mass was palpable in the abdomen. The right testicle was the size of a hen's egg; it was smooth, round and not tender. The epididymis felt normal, though somewhat tender. The left testicle appeared normal. A diagnosis of testicular neoplasm was made, and simple orchidectomy was performed by Dr. C. Craig.

The patient had an uneventful convalescence, and two weeks after the operation a radium pack 7.0 centimetres by 7.0 centimetres by 2.0 centimetres in size containing 99 milligrammes of radium screened by 0.5 millimetre of platinum was centred over the umbilicus and left *in situ* for six days. By the usual methods of calculation, this gave an approximate dose of 1,600 r at a depth of 5.0 centimetres, the approximate distance between the para-aortic glands and the skin, and a dose of 8,500 r to the skin surface. A fairly intense epidermolytic reaction was noticed when he was discharged from hospital.

The testicle removed at operation was a tense cystic tumour containing grey, dirty-looking fluid. There is no record that the cord or epididymis was involved. Dr. R. E. Richard's report on the section was as follows:

Mostly cystic in structure. There are areas of small round cells which may possibly be sarcomatous, also cartilaginous areas. The admixture points to the condition being a teratomous one, possibly malignant.

Communications from the patient and his medical attendant in 1932, 1933 and 1936 stated that he was in the best of health, and on June 12, 1939, he reported for examination. He felt very well, and no inguinal or abdominal glands were palpable. Nothing was heard from him until June 26, 1942, when he was again admitted to hospital. He had noticed several lumps in the right groin six months previously, and these were gradually increasing in size. They caused him no disability apart from a slight amount of swelling of the right thigh and leg. His general health was good, and he was employed as a log carter at the time.

On examination, several small, stony-hard glands were found to be present in the right inguinal region. Abdominal palpation revealed no abnormality, and the heart, lungs and central nervous system were clinically normal. A gland was excised under local anaesthesia. Section revealed it to be of an actively growing teratomatous nature. The inguinal and femoral regions were irradiated by a single plane radon implant. Nine needles, each of which contained 1.5 milligrammes per centimetre of radon filtered by 0.8 millimetre of platinum equivalent, were inserted and left *in situ* for seven days. Calculated by Paterson and Parker graphs and checked against tables prepared by T. H. Oddie, the approximate dose was found to be 8,000 r at a point one centimetre below the centre of Poupart's ligament. The patient was then discharged from hospital.

He was examined again on August 27, 1942, when the glands had considerably decreased in size, although one or two small ones were still palpable below Poupart's ligament in the region of the femoral artery. A persistent productive cough had developed shortly after he left hospital, and he was not feeling so well as formerly.

On September 25, 1942, he was readmitted to hospital. The cough had increased in severity and he was expectorating copious amounts of whitish sputum. He became easily dyspnoeic and had begun to suffer from pleuritic pains in the left side of the chest. He had lost two stone in weight during the preceding two months, and felt very weak. At this time he was the father of eight children, five of whom were born after the orchidectomy. On examination, he appeared rather emaciated. The percussion note was impaired at the base of the left lung, and the breath sounds were absent and vocal fremitus and vocal resonance diminished in that area. Coarse râles were heard in the right side of the chest anteriorly. Abdominal palpation revealed no mass. The report on a skiagram of the chest was as follows: "Nodular fibrosis in the lungs, which seems likely to be due to an unusual type of metastatic involvement, probably not blood-borne." The dyspnoea increased, and his condition steadily deteriorated. He died on November 14, 1942.

<sup>1</sup> A skiagram and a photomicrograph were submitted for publication, but owing to present difficulties have been omitted.

### Post-Mortem Examination.

The relevant findings at the post-mortem examination were as follows.

The left testicle was normal.

In both lungs similar changes were seen; the lungs were studded with secondary deposits. These were small, irregular greyish masses, varying from the size of a grain of wheat to approximately 0.5 centimetre in diameter. They were confluent at the bases, where the lungs were composed of almost solid tumour tissue, and progressively decreased in number towards the apices, where they were separated by distances of 0.5 to 1.0 centimetre. Metastatic growths were present on the visceral pleura, these being an extension from the interior of the lungs. The two layers of pleura were adherent.

Several of the lumbar and many of the paraaortic glands on both sides were nodular, hard and slightly enlarged. One or two mesenteric glands were also suspected of being affected by malignant change, as their consistency was somewhat harder than normal, although they were not enlarged. This was confirmed by examination of sections. In one part of a section of a lumbar lymph gland examined were seen tubules and glandular spaces lined by columnar epithelium supported by dense fibrous stroma, together with some lymphocytic infiltration. In other areas the cells were less differentiated and irregularly arranged, the appearances resembling a scirrhous carcinoma. The principal elements of the metastases resembled the adenocarcinoma of the alimentary canal. The pulmonary metastases were similar in structure, but the attempt at glandular formation was more primitive and the fibrosis not so marked.

### Discussion.

This case was considered worthy of report because of the unusually long interval between operation and recurrence, in the literature available to me the longest on record. Recurrences after orchidectomy for *teratoma testis* usually occur within twelve months.<sup>(1)</sup> In a series of 15 cases, H. R. Dew<sup>(2)</sup> found that 11 patients were dead within twenty-eight months of operation. The other four cases were recent at the time he published his figures, and none of these patients had lived for more than twenty months after operation, although two already had demonstrable glandular metastases at that time. G. Gordon-Taylor and A. S. Till<sup>(3)</sup> had 14 cases; one of the patients was alive and well at eleven and a half years and another at two years. Of the twelve fatal cases, the tumour had recurred within one year in ten instances and within three years in one, and in the last case metastases were present at the time of operation, although this patient survived for eight and a half years as a result of subsequent irradiation and excision of recurrences.

In the case reported metastases were not seen until eleven and a half years after operation, and the exact reason for this long time interval is somewhat obscure. The fact that the first clinical evidence of secondary deposits was in the inguinal region (some six months before the signs and symptoms of mediastinal involvement were noticed) suggests that there was an occlusion of the normal lymphatic channels, with resulting spread to the inguinal glands by the process of retrograde lymphatic embolism.<sup>(4)</sup> Whether the radium treatment after operation played any part in retarding spread is difficult to assess. Although teratomata for the most part are notoriously radio-resistant, and deep X-ray and radium therapy are almost if not completely useless,<sup>(5)</sup> the inguinal deposits decreased in size considerably after the insertion of radon needles, and in point of fact were quite impalpable shortly before the patient's death. The tumour was evidently radio-sensitive to some degree, in which case the post-operative radium therapy may have been sufficient to give the early glandular metastases a "disappearance dose" and inactivate them, the subsequent fibrosis of the lymphatics preventing any further spread for many years. Perhaps the "areas of small round cells which may possibly be sarcomatous" mentioned in the report on the original section (which unfortunately could not be traced) played some part in the radio-sensitivity of the tumour. Although neither these nor any cartilaginous areas were found in the secondary deposits, irradiation may have suppressed them.

Chevassu,<sup>(1)</sup> in a series of 100 cases of testicular neoplasm treated by orchidectomy, found the mortality rate to be 81%, taking as his standard of cure freedom from symptoms four years after operation. H. R. Dew<sup>(2)</sup> points out that four years is too low a figure, "as there have been some cases reported in which death took place from metastases as long as six years after operation". This case illustrates Dew's view.

### Summary.

1. A case of metastases from a *teratoma testis* eleven and a half years after orchidectomy and radium therapy is described.

2. It is suggested that this unusually long interval was due to an occlusion of the normal lymphatic channels resulting from the radio-sensitive nature of the tumour.

3. Cases such as this show that freedom from recurrence four years after operation for malignant disease of the testicle cannot be regarded as a standard of cure.

### Acknowledgements.

I am deeply indebted to Dr. R. A. Willis, pathologist to the Alfred Hospital, Melbourne, for the interest he has taken in this case. My thanks are due to Dr. C. Craig, Surgeon Superintendent, Launceston General Hospital, for permission to publish the case. I wish to thank Dr. W. F. Holman, radiologist to the Launceston General Hospital, for his assistance and for the X-ray and radium data. To Miss Barbara Meston, B.Sc., physicist to the X-ray Department of the Launceston General Hospital, I am indebted for the radium and radon calculations. Dr. R. Y. Mathew, Director of the Commonwealth Health Laboratory, Launceston, kindly prepared the post-mortem sections for me.

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### A CASE OF ULCERATION OF THE DUODENUM AND JEJUNUM.

By W. T. CHAMBERS,  
Adelaide.

### Clinical Record.

Mrs. T., aged thirty-four years, the mother of two children, was admitted to the Royal Adelaide Hospital on June 3, 1942, under the care of Sir Trent de Crespigny, complaining of abdominal pain following the intake of food. The pain was dull in character, and was situated in the epigastric and umbilical regions; its onset was ten minutes after meals. The complaint had been present for nearly six months. During the four days prior to her admission to hospital, the patient had been vomiting. The vomiting was associated not with the pain, but with an accompanying diarrhoea. For the previous three weeks her feet had been swollen, and for the last two weeks she had been very thirsty, her mouth becoming dry if she did not frequently sip fluids. Her appetite was poor; she had lost seven pounds in weight during the preceding seven weeks, and sleep was disturbed by frequent night sweats. Menstruation had been quite normal, the periods coming on every twenty-eight to thirty days, but the last menstrual period had been missed.

In January, 1942, the patient had begun to suffer from colicky abdominal pains. These began in the loins, passed anteriorly to reach the umbilical region, and were followed two hours later by vomiting. Approximately two months later her appendix was removed and the colicky pains ceased. An operation for *prolapsed uteri* had been performed in September, 1941. There was a history of tuberculosis in the family, four uncles having died of the disease.

Examination showed the patient to be thin and wasted and in some respiratory distress. Her temperature was 97.8° F., her pulse rate was 96 per minute, and her respirations numbered 20 per minute. The pupils were equal and reacted to light and accommodation, and the fundi were normal. Some carious teeth were present and the tongue was coated with a brown fur.

The apex beat of the heart was impalpable, but the sounds were rapid and regular, a tic-tac rhythm being present. The blood pressure was 115 millimetres of mercury, systolic,



and 75 millimetres, diastolic. No abnormality was detected in the lungs. The skin of the abdomen was dry and lax. Some tenderness was present in the epigastrium, the central part of the abdomen and the left flank. No mass was palpable and no rigidity was present. The knee jerks were very active, the right more so than the left. The plantar response was flexor in type. The upper limbs were thin. A pronounced degree of oedema was present in both lower limbs to the level of the knee joints. The extremities were cold and cyanosed. There was also excessive curvature of the finger nails. The urine was quite normal, being neutral in reaction and having a specific gravity of 1.022.

On the day following her admission to hospital, the patient's temperature rose to 101.4° F. and the pulse rate to 116 per minute. She still complained of almost constant abdominal pain. The bowels were opened twice, the motions being pale and soft. An X-ray film taken on the same day revealed no evidence of lung disease.

On the next day the temperature was 101° F. and the pulse rate 120 per minute. Diarrhoea was now present. There were five bowel actions during the day, the motions being pale yellow and watery.

The next day the patient, in addition to the abdominal pain, complained of profuse sweating. The temperature was 102° F. in the early morning, but later fell to 97.4° F. The pulse rate was still rapid, reaching a maximum of 130 and never falling below 116 per minute. The diarrhoea was still present; there were eight bowel actions in the day. The character of the motions was unchanged.

At midday on the following day the patient suddenly collapsed. She was pale, sweating profusely and stuporose. The temperature fell to 95° F. and the pulse rate rose to 138 per minute. The usual treatment for shock was instituted and the patient recovered from the collapsed state. Four hours later the patient vomited some blood-stained material. This closely resembled liquefied red jelly, in both colour and consistency. One hour and a half later a further quantity of material similar to that just described was vomited. At the same time similar material was passed per rectum.

At this stage the patient was in a state of severe collapse. Treatment for shock was begun after the first attack of vomiting, but it was of no avail, as the patient died three hours after the second attack of vomiting before a blood transfusion could be given.

#### Post-Mortem Examination.

A post-mortem examination was carried out by Professor J. B. Cleland. Very little subcutaneous, omental or mesenteric fat was present. Twenty-eight ounces of blood-stained fluid containing flakes of fibrin were present in the peritoneal cavity.

At a distance of three inches beyond its commencement, the jejunum was adherent by blood clot to the under side of the transverse mesocolon. The adhesion was close to the wall of the colon and near its mid-point. When an attempt was made to separate the adhering portions, the jejunum was found to be torn in two, though little force was exerted. The rent appeared to be covered by omentum. Clotted blood was present in the lumen of the gut.

When the intestines were opened, four areas of ulceration were found. The first was in the third part of the duodenum; it was one inch broad, involved the whole circumference of the bowel and had sharp edges. The second area was two inches below the first; it was half an inch in diameter and situated in the jejunum; this had ruptured and was adherent to the mesocolon. The third area, a transverse ulcer three-quarters of an inch broad, was situated in the jejunum three feet six inches from the duodeno-jejunal junction, and involved almost the whole circumference of the bowel; the edges were raised and rather fungating, presenting the appearance of a malignant ulcer. The fourth area, about four inches below the third, was transverse, being half an inch in diameter and having sharply defined edges. The whole of the small bowel and duodenum was filled with blood and blood clot. The small bowel was distended and its mucosa blood-stained. Some of the mesenteric glands draining the affected portion of bowel were enlarged.

The stomach contained a little food and some fluid resembling coffee-grounds.

The liver weighed 43 ounces; it was pale and fatty and had several groups of dilated veins on the surface.

The spleen, weighing five and a quarter ounces, appeared to be quite normal, being dark red and moderately firm. A small spleniculus the size of a cherry was also present.

Emphysematous changes in the anterior portions and at the apices of the lungs were shown.

The heart was small; it weighed only eight ounces, but was otherwise normal.

All other organs appeared to be normal.

Death was due to the hæmorrhage from the ulcerated bowel.

Examination of a direct smear of material from the bases of the ulcers disclosed the presence of Gram-positive and Gram-negative bacilli. Culture of similar material yielded a growth of *Bacillus coli communis* and of a Gram-positive bacillus, morphologically and culturally resembling *Clostridium welchii*.

Microscopic examination of sections from the ulcers showed them to be of a chronic inflammatory nature; they presented in parts an appearance not unlike that of a chronic gastric ulcer. On the surface was an extensive necrotic area containing numbers of breaking-down cells and nuclei and many poorly stained bacteria. Deep to this layer was one of chronic inflammatory tissue with some fibrous tissue. In this layer plasma and reticulo-endothelial, fibroblastic and some polymorphonuclear cells were to be seen. In some areas the chronic inflammatory tissue was found to be infiltrating into the muscle layer. At one point on the surface of one ulcer were found a number of peculiar lozenge-shaped crystals. It seems probable that these originated from ingested food and were not of pathological importance.

Examination of sections of the liver revealed numerous large fat globules. Some minute granules were also present in the sinusoids, between the liver cells and in some of the blood vessels.

In the kidney, granular exudate was present in the capsular space of some of the glomeruli.

In the spleen some peculiar microscopic nodules were seen, each approximately filling an oil-immersion lens field; they presented the appearance of hyaline fibrous tissue. The Malpighian bodies were prominent.

#### Discussion.

Although a number of cases have been reported, ulceration of the lower part of the duodenum and small bowel to the extent seen in this case appears to be a relatively rare pathological condition, and does not seem classifiable under any of the ordinary pathogenic conditions of the small intestine. It appears to resemble a peptic ulcer, in that it may cause bleeding, has a tendency to perforation and is histologically characterized by chronic inflammatory changes.

Scott and Cleland<sup>(1)</sup> described a case of multiple superficial scarring ulcerations of the small intestine and duodenal scar with pyloric obstruction, in which a gastro-enterostomy had been performed previously. In this case also gross emaciation was a feature, and this was thought to be due to interference by the ulcerations with the movements of the bowel, leading to the absorption of toxins.

Kanagarayer<sup>(2)</sup> reported three cases of multiple superficial ulcers of the small intestine occurring in Tamils at Kuala Lumpur. In two of these, there was progressive emaciation associated with diarrhoea. Microscopically, the ulcers showed evidence of chronic inflammatory changes.

Brown and Pemberton<sup>(3)</sup> in a survey of cases of solitary ulcer of the ileum occurring at the Mayo Clinic during the fifteen years preceding 1936, found that in only one was death caused by perforation and bleeding of an ileal ulcer. During the period 1916 to 1932, there were ten cases of solitary ulcer of the ileum in which operation was performed. Eight of the patients survived operation, the other two dying of post-operative complications. In no case was the correct pre-operative diagnosis made; but in four cases the lesion was localized to the small bowel. In those cases in which microscopic examination was made, the ulcers were of a simple subacute inflammatory nature.

Two cases of simple non-specific ulcer of the jejuno-ileum have been described by Robinson and Wise.<sup>(4)</sup> In one of these there was evidence of two types of mucosa at the site of the ulcer, and on account of this, it was thought that there might be some relation between this condition of ulceration and the presence of heterotopic gastric mucosa in the small intestine.

Richardson<sup>(5)</sup> has reported two cases of simple ulcer of the jejunum, and in a survey of the literature on the subject prior to 1922 he came to the conclusion that no definite ætiology could be assigned to such ulcers; he thought, however, that in those cases in which jejunal ulceration occurred close to the end of the duodenum, it was possible that some disturbance of pyloric control might lead to gastric contents reaching the jejunum without neutralization, and so to the

formation of a true peptic ulcer. For ulcers occurring lower down in the bowel, this cause is unlikely.

Gale<sup>(6)</sup> described a case in which, during a period of three years, perforations of ulcers of the ileum occurred on three separate occasions. At periods varying from one to two weeks before each perforation, the patient suffered from furunculosis of the external auditory canal. On the day on which the last perforation occurred, an X-ray examination disclosed a root abscess of one tooth in the upper jaw. Microscopically, the ulcers were of a simple inflammatory nature. It was thought that the perforations resulted from the furunculosis.

Stitch and Collier<sup>(7)</sup> reported a case in which perforation of two ulcers at the lower end of the ileum occurred. Microscopic examination showed the lesions to be of a simple acute ulcerative nature, possibly secondary to vascular obstruction, as there was evidence of endarteritis and thrombosis of vessels in the subperitoneal coat.

Reference to the archives of the Royal Adelaide Hospital<sup>(8)</sup> shows that, between the years 1920 and 1942, eleven cases of ulceration of the small bowel (excluding those of tuberculous and typhoid origin) were discovered at 5,000 autopsies. In eight of these, the ulceration appeared to be associated with inflammatory changes elsewhere; thus it was associated with abscesses of the skin and lung, with purulent pericarditis, with meningitis, with peritonitis, with empyema of the gall-bladder and with sloughing oesophagitis. In no case was the ulceration the direct cause of death.

Thus, in this brief survey of the subject, despite the several theories that have been put forward, it is difficult to assign any one cause to the condition, although in most cases it seems to be one of a simple inflammatory nature.

#### Acknowledgement.

I wish to express my thanks to Sir Trent de Crespigny and to Professor J. B. Cleland for their help and encouragement in the preparation of this report.

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## Reviews.

### MEDICAL DISEASES OF THE WAR.

"The third edition of 'Medical Diseases of War', writes Sir Arthur Hurst, 'has been brought up to date with the help of all the literature published prior to August, 1942.'"

It is a subject for debate whether so much space should be allotted to the hysterical manifestations of war neurosis. The long series of discussions on paralysis, tremors, aphonia

and the rest occupy some 150 pages. It is doubtful whether many of them are worthy of such detailed discussion—they are symptoms of an underlying nervous disturbance. The criticism may be repeated that Sir Arthur Hurst actually gives very little guide to treatment. He airily remarks, "cured by psycho-therapy at a single sitting"—but medical officers with the best intentions and Sir Arthur Hurst's advice have gained very little success. One *verbatim* account of such a treatment is worth many pages of vague generalities. It is notable that on the whole those who have neurotics to treat in England in this war seem to have found them much more amenable to simple explanation and persuasion than in the last war. This is probably due to the much earlier recognition of the mental factor and the much improved general attitude to these conditions.

In this respect Australia seems to have something to learn from the Royal Army Medical Corps—the early concentration on psychiatric treatment and the institution of special centres as detailed by the consultant in psychiatry to the British Army have undoubtedly been a potent cause of this. A factor not noticed by Hurst, which is unfortunately a very real one among Australian troops, is simple home-sickness. The chapter on the anxiety neuroses in war by the late lamented A. T. Ross is retained with great advantage. It is no exaggeration to say that in this chapter Ross supplied the pathology to the other chapters which were concerned merely with symptomatology. He also does go into the detail of treatment, and any medical officer after reading this chapter would at least have some material with which to make a start. The lessons to be derived from the first 150 pages are (a) prevention, (b) early recognition, (c) current treatment.

The chapter on digestive disorders is full of sound teaching. It is, however, doubtful whether the establishment of special centres for digestive disturbances is really necessary. The treatment of gastro-intestinal disease is part of general medicine and should be carried out by men dealing with general medicine. The principles are not so abstruse and its methods are straightforward enough to allow a doctor who in civil life has treated patients with gastric or duodenal ulcer to be quite at home. The multiplication of small special units provides problems in buildings, equipment and staff.

An admirable new article is that on louse-borne typhus. Although in this country this disease has not been a menace, North Africa and Europe are already facing quite grave epidemics; recent figures give 20,000 in Egypt, 40,000 in Tunisia, and increases of up to 40% in Rumania, Poland and Czechoslovakia. Cases are even occurring in Germany and a few in France, while it has been common in Spain for the past six years. The numbers are unfortunately only too likely to increase. This chapter is by Dr. Melville D. Mackenzie, who had first-hand experience with the Nansen Relief Administration in Russia. It is practical and complete, a model of what such writing should be.

A surprise to most people will be the new chapter on diphtheria by E. H. R. Harries. He describes the extensive and troublesome outbreaks which occurred in the Middle East. His most important recommendation in treatment is ample antitoxin (50,000 units he considers the upward limit) given intravenously with adequate precautions against anaphylactic shock. A minor, but helpful, accessory is glucose for the failing heart, but given in more concentrated form than the ordinary 5% fluid. Harries is also emphatic on the folly of hurried convalescence.

The chapters on malaria and meningococcal septicæmia retain their excellence—the mere title of the latter is a reminder that the disease may be present with no meningeal signs at all.

There is the long chapter on skin disease—mainly scabies, and impetigo, and *pediculi corporis*. Of these scabies is the only one to cause much trouble in this country. The very welcome recent report by Mellanby that the treatment of clothing is unnecessary appeared too late for inclusion. Nothing is said of *pediculi capitis*—a very real problem at times in Women's Service Units. Here the use of a more chemical parasiticide such as "Lethane" has made treatment much easier and more effective. Nor is there any word of tinea. Finally there is still no chapter on influenza—so far a grave problem even in mild epidemics, possibly to become even more terrifying before the war ends.

These are minor criticisms. The fact remains that Hurst and his collaborators have packed into a small space a remarkable amount of practical information. Despite the compression, the book is written in a most attractive style, and it will be of value to anyone—part-time or whole-time officer—working among masses of men and women under war conditions.

<sup>1</sup> "Medical Diseases of War", by Sir Arthur Hurst, M.A., D.M., F.R.C.P., with the cooperation of H. W. Barber, M.A., M.B., F.R.C.P.; H. B. P. Dixon, M.C., M.D., D.T.M. and H. F.R.C.P.; E. H. R. Harries, M.D., F.R.C.P., D.P.H.; F. A. Knott, M.D., F.R.C.P.; Melville D. Mackenzie, M.D., D.T.M. and H. T. A. Ross, M.D., F.R.C.P.; Arnold W. Stott, M.A., F.R.C.P.; Third Edition, 1943. London: Edward Arnold and Company. 8½" x 5½", pp. 503, with 52 illustrations. Price: 21s. net.

# The Medical Journal of Australia

SATURDAY, OCTOBER 16, 1943.

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## THE REHABILITATION AND RESETTLEMENT OF DISABLED PERSONS.

IN the issue of June 19, 1943, the subject of rehabilitation after the war was discussed in these pages. The subject was approached from two points of view—first of all in regard to the medical officers of the three branches of the armed forces and their return to civilian medical practice, and secondly in regard to non-medical personnel. The latter were divided into two groups—those who had become casualties on active service and those whose health and vigour were unimpaired. Mention was made of the fact that one of the Australian Branches of the British Medical Association had considered a scheme for an organization that would deal with the treatment of disabled persons. As a matter of fact the New South Wales Branch appointed a committee "to draw up a statement of a plan of rehabilitation services" for submission to the Federal Council. As was noted in the report of the recent meeting of the Federal Council, the New South Wales Branch committee's report was considered by the council. Although mention was made in this report of medical conditions and of the importance of the mental outlook of the patient, it was concerned frankly with the treatment of fractures. At the same time it was admitted that the ultimate aim should be the establishment of a general traumatic service. The Federal Council, recognizing the self-imposed limits of the report, was content to recommend to the several Branches that it should be sent to the superintendents of hospitals in the Branch areas. As the Federal Council confined its attention chiefly to the New South Wales Branch report, it has seemed advisable, in spite of our discussion last June, to refer to the subject once more. On this occasion it is intended to bring to the notice of readers the salient features of a report of the Inter-departmental Committee on the Rehabilitation and Resettlement of Disabled Persons which was presented to the British Parliament by command of His Majesty in January, 1943.<sup>1</sup>

<sup>1</sup> "Report of Inter-departmental Committee on the Rehabilitation and Resettlement of Disabled Persons", 1943. London: His Majesty's Stationery Office; 9½" x 6", pp. 51. Price: 9d. net. A summary of the report will also be found in the *International Labour Review*, July, 1943, page 43.

The first statement in the report is that the successful rehabilitation of a person disabled by injury or sickness is not solely a medical problem. In the strictly medical sense the process of rehabilitation entails the prevention and restoration of loss of muscle tone, the restoration of the full function of the limbs and the maintenance of the patient's general health and strength. It may not be out of place to insist again on the recognition of the mental sphere as calling for special attention in regard to "general health". The process of rehabilitation should begin as soon after accident or illness as the patient's condition permits and should be continued without interruption until the greatest possible degree of recovery has been attained. When restoration in the medical sense has been achieved the services of the social and industrial expert are required. This expert has to determine, in consultation with the medical experts, whether the patient who is what may be called medically restored can return to his previous occupation. Secondly, he has to ensure that the restored capacity is used to the best possible advantage whether in the previous or in some other occupation. Clearly it is in the best interests both of the country and of the individual that this should be done. There may appear to be a conflict of interests. For example, a man who has become disabled by war, whether in the field or in the auxiliary services, may be unfit to resume his previous occupation. He may then undergo a course of training either in an occupation that he will be able to follow after the war is over or in one of the wartime activities such as munition making which will cease when hostilities cease. If he trains in the latter occupation he will have to undergo a second training when his wartime industry has come to an end. In spite of the fact that a wartime industry may yield higher wages than another, the long term view should be taken and the permanent occupation and interest of the man should have first consideration. This long term view will mean in general an economy of effort, and since disablement has been acquired in the service of the State, the individual may well be given a permanent occupation. This may be put in another way by the statement that any peace-time scheme of productive effort should envisage the employment of a percentage of disabled persons, chosen for each occupation according to their capacity for being trained for its requirements. The next point to be considered is that there is more than one type of disablement. According to the report disablement is popularly associated with visible physical injury of some kind, for example, limb amputation or injury such as to prevent the full use of a limb, and there is a tendency to regard this type of disablement as more serious and a greater handicap to employment than disablement due to other causes. The committee holds that this is far from correct and that the problem of complete rehabilitation and resettlement is more difficult among the medical than among the surgical group of disablements. The chief reason is that surgical treatment is as a rule carried to a stage which leaves the patient fit and able to undertake work requiring physical effort and technical skill; though the patient is not suited to all occupations, his condition is not likely to become worse through employment which is within his general capacity. When disablement is due to a medical cause the physical fitness of the patient which is impaired may be further impaired by unsuitable employment, and



mental deterioration may also be present. Continuous medical supervision is rarely required for surgical, but may be necessary for a substantial period for medical disablements. Again a physical injury which is visible commands a greater degree of sympathy than a disablement due to medical causes in which the handicap is not obvious, and the seriousness of a medical disablement may not be recognized and may be easily doubted. In regard to a surgical disablement this sympathy carries with it an under-estimate of working capacity and a tendency to regard the individual as suitable for only the lower grades of employment; in regard to medical disablement the reverse holds true and individuals are assumed all too commonly to be capable of returning to the occupation which they followed before their disablement. A man with a disability which is not obvious may find it difficult to retain employment and to make a satisfactory settlement. On the general question of resettlement the committee insists that the only satisfactory form of resettlement for a disabled person is employment which he can take and keep on his merits as a worker in normal competition with his fellows. One of the most important statements in this report is one concerning the general prevalence of the idea that, apart from a few exceptional cases, full efficiency in ordinary employment is beyond the capacity of anyone who fails to pass a general and theoretical medical test; from this, it is held, derives the view that the resettlement of the disabled must be a matter of philanthropy and goodwill. "This idea is wholly out of date." In order to show that, granted careful assessment of individual capacity and selection of employment, a large proportion of disabled persons are capable or can be rendered capable of taking their places in industry on normal terms, reference is made in a footnote to conditions prevailing at the Ford works, where "no one applying for work is refused on account of his physical condition".

So much for the philosophical basis on which the Inter-departmental Committee believes that rehabilitation and resettlement of disabled persons in Great Britain should be planned. The philosophical basis of a scheme of rehabilitation is all-important. No scheme, however carefully planned, can be successful if its philosophical basis is unsound, and even an indifferently planned scheme can be in a large measure rescued and made to achieve a useful end if the considerations underlying it are sound. The scheme envisaged by the British committee is to be open to all persons without regard to the cause, nature and date of the disablement. The causes of disablement considered categorically in the report include: fractures and physical injuries, other surgical conditions and general medical conditions, cardiac conditions and pulmonary tuberculosis, blindness, deafness, neuroses, psychoses, industrial diseases. It is suggested *inter alia* that hospital facilities will have to be developed to deal with many of these conditions. The rehabilitation centres mentioned in the New South Wales Branch committee's report would be examples of the kind of development intended. It is also stated that remedial and occupational therapy have yet to win full recognition by the medical profession, especially in relation to general medical and surgical conditions as distinguished from conditions caused by injury. The suggestion is even made that a special diploma should be instituted covering the special needs of rehabilitation.

This suggestion may be countered with the cogent argument that an interest in remedial and occupational therapy depends on the practitioner's attitude of mind towards the whole subject. An attitude that would not neglect these subjects is one that should be sought by every medical practitioner of today; it should not be looked on as something extra, to be acquired laboriously and to be labelled as a worthy acquisition. Be that as it may, we may pass on to note that under the heading of post-hospital rehabilitation such subjects as "reconditioning", artificial limbs and vocational training are included. In regard to these it must suffice to note that three types of vocational training are mentioned: (a) training for the professional and higher grades of technical, administrative and executive employment; (b) training for semi-professional and lower grade technical, executive and clerical occupations; (c) training for industrial occupations. In connexion with resettlement three important recommendations are made, as follows: (a) the introduction of a quota of disabled persons, and the imposition upon employers who do not satisfy the quota of a restriction on the engagement of workers; (b) the scheduling of certain occupations for the benefit of disabled persons; (c) the creation of a register of persons handicapped by disablement. It is also advised that to deal with the post-war problem a specialized service should be established within the present employment exchange machinery, to place disabled persons and to carry out the follow-up work necessary to ensure that the placement is satisfactory to both employer and worker. The advice of medical and other experts should be made available to this service.

From this discussion it will be clear that the Federal Council at its recent meeting touched on little more than the fringe of this enormous subject. It may be argued that the rehabilitation and resettlement of Australian persons who are disabled in the present war is not entirely a medical subject—it is not—and that political influences may take from the medical profession much of the responsibility that should rest on its shoulders, as was done in the matter of soldiers' pensions after the last war—they may. These considerations should not keep the profession from urging on the Commonwealth Government the setting up of an organization so planned that its functioning will help the disabled man to help himself, give him an incentive to efficient work in a sphere of usefulness and fill him with pride in his achievements as an alert and healthy-minded man. Perhaps at its next meeting the Federal Council will approach this subject again with a broad conception of its meaning. In these circumstances it should recommend to the Federal Government that the subject should be studied from the Australian point of view by a body similar to the committee which drafted the English report. Australian conditions are sufficiently distinctive to warrant such a course of action.

## Current Comment.

### ULCERATIVE GINGIVO-STOMATITIS

DURING the war of 1914-1918 the condition known as ulcerative gingivo-stomatitis came into great prominence;

it achieved notoriety chiefly under its army title of trench mouth. The condition was not new—it had been known to occur in epidemics in different parts of the world. Its prevalence among soldiers in France and elsewhere was accompanied by an increased incidence among the civil population, and investigations were undertaken to determine its cause. K. Goadby made an investigation for the Medical Research Committee and published a report in *The Lancet* of May 6, 1916. He obtained from the gums, cheeks and throats of patients *Bacillus fusiformis* and spirochaetes. The spirochaetes were those commonly associated with Vincent's angina. F. B. Bowman also reported on the same condition and his report was published in 1916 in the *Proceedings of the Royal Society of Medicine*. Bowman isolated organisms of a similar type to those described by Goadby. Discussing the aetiology of the condition in man (lesions had been produced in laboratory animals), Goadby stated that it was obscure. The aetiology is still obscure. Inquiry has centred round the parts played in the causation by viruses and vitamins. Stomatitis is known to be caused by deficiencies of vitamins, especially vitamin C and those of the B complex. The suggestion is that the lack of vitamin produces a change in the gingival tissue which makes it a ready prey to the onslaught of the organism. In this connexion it is to be noted that nicotinic acid has been used with success in the treatment of Vincent's angina. A full discussion on this subject will be found in *The Lancet* of February 21, 1942, at page 232. Here it is pointed out that there are certain difficulties in the whole-hearted acceptance of the vitamin deficiency theory. Stomatitis, according to recent evidence, commonly arises from a virus infection. Two sets of investigations are mentioned. The first is that of K. Dodd, J. Boddington and L. Johnston, who produced from 27 out of 28 children suffering from gingivo-stomatitis, lesions in the cornea of the rabbit typical of those produced by herpetic virus. They also demonstrated immunity to a known strain of herpetic virus in seven out of eight rabbits which survived the primary injection. The second set of investigations are those of T. F. McNair Scott and A. J. Steigman, who carried their investigations further than Dodd, Boddington and Johnston. They not only isolated the virus of *herpes simplex* from the mouths of children suffering from acute infectious gingivo-stomatitis, but also found herpes-neutralizing antibodies in their blood during convalescence. Scott and Steigman, after discussing their observations on stomatitis in children which they regard as the main clinical manifestation of primary infection with the virus of *herpes simplex*,<sup>1</sup> refer to trench mouth as a very contagious disease for which the fusospirochaetal group of organisms is held to be responsible. In the light of their observations on the "clinically similar" stomatitis of childhood, in which the fusospirochaetal group of organisms appears to be of only secondary importance, they think that an investigation for herpes infection in trench mouth might be illuminating. According to Scott and Steigman herpetic stomatitis occurs in two forms, primary and recurrent. The primary form is a systemic infection, and they suggest that herpetic fever and trench mouth represent a primary infection in older people who have escaped a childhood infection. They think that the terms "ulcerative" and "Vincent's" should be divorced—they "have long lived together synonymously". If there are cases in which the fusospirochaetal organisms are of true aetiological significance, "they can be included in the group that now includes other bacteriologically induced stomatitis", such as those caused by the pneumococcus and the gonococcus. According to these ideas ulcerative gingivo-stomatitis is a very different condition from that postulated by those who hold the vitamin deficiency and bacterial infection theory.

With this conception of the present state of knowledge it will be useful to consider a discussion recently held at the Royal Society of Medicine between the Section of Odontology and the United Services Section.<sup>2</sup> Brigadier

Stobie, who read the opening paper, drew attention to the difference of opinion that often existed as to whether the patient was or was not suffering from the condition. He thought that attention should be directed primarily to a consideration of the disease which fulfilled the conditions indicated by its name and about the diagnosis of which there was some general agreement. Dental surgeons, he said, were more familiar with a condition of the gums known as acute ulcerative gingivitis, and their medical colleagues spoke of Vincent's angina when the fauces and pharynx were mainly affected and of a true stomatitis when the whole buccal cavity was involved. To argue this statement would mean a discussion of the whole question of aetiology, and in this would be included the question as to whether the treatment was a matter primarily for the doctor or dentist. In the present state of ignorance such an argument would be futile. Discussing aetiology, Stobie could not agree that a factor of lowered resistance was always present, but he thought that there was always some predisposing local departure from the normal which might be trivial in degree. He then gave the findings discovered on the examination of 1,200 men drawn from all walks of life and varying in age from nineteen to fifty-two years. The standard of normality was placed at a high level. Slight gingivitis was found in 263 instances; gingivitis, characterized by a definite marginal or general inflammation but no pocket formation, was present in 270 cases; and parodontal disease varying in degree was present in 140. This gave a total of 673 men whose tissues had some evidence of injury. Among the whole total of 1,200, but not included in the 673, there were only eight men who could be regarded "by any stretch of imagination" as suffering from acute ulcerative gingivitis. Stobie could find no evidence to support the view that vitamin deficiency was concerned in the causation of parodontal disease. He appears to accept the view that *Bacillus fusiformis* and Vincent's spirochaete are the organisms chiefly concerned. Surgeon-Commander E. R. Longhurst, of the Royal Navy, said that 22,675 men with an average age of twenty-one years and eight months had been examined on their entry to the Royal Navy; during the same period 660 artificer boys aged fifteen years were also examined. Among the first group 19.2% of the mouths were in good condition, 59.1% were "fair" and 21.7% were neglected. Among the second group 38.7% of the mouths were in good condition, 59.4% were "fair" and only 1.9% were neglected. Longhurst analysed these findings. Among the two groups considered as a whole the incidence of ulcerative gingivo-stomatitis was 0.545% for those with neglected mouths; it was 0.080% for those with "fair" mouths and no case was present in the healthy mouths. Several conclusions are drawn: (i) The greater the degree of oral sepsis, the greater is the incidence of the disease. (ii) The greater the degree of oral sepsis, the greater is the severity of the disease. (iii) The greater the oral sepsis, the higher the concentration of Vincent's organisms. When patients presenting signs of the disease were examined it was concluded that the greater the concentration of Vincent's organisms, the greater was the severity of the disease. Longhurst referred to the work of Scott and Steigman and of Dodd, Boddington and others and also to the *Lancet* article of February 21, 1942. He thought that the condition dealt with by these investigators was different from that considered by him, in which spirochaetes and *Bacillus fusiformis* predominated. He emphasized the view that the condition did not occur in clean mouths and that it did not occur in all dirty mouths. Longhurst insisted that to try to show that any one systemic factor was the sole cause of the condition was to ignore others which undoubtedly exerted an influence. After referring to avitaminosis and debilitating conditions and mentioning the possibility of endocrine influence, he concluded that there were possibly several systemic conditions which could produce similar results, results which might have a bearing on the onset of the disease in a mouth predisposed to it. A number of loose ends will have to be gathered up before a line will be formed leading to the solution of the problem.

<sup>1</sup> *The Journal of the American Medical Association*, September 20, 1941, page 999.

<sup>2</sup> *Proceedings of the Royal Society of Medicine*, June, 1943.

## Abstracts from Medical Literature.

### SURGERY.

#### Vitamin C and Repair of Injured Tissue.

G. H. BOURNE (*The Lancet*, December 5, 1942) has reviewed the experimental evidence concerning the part played by vitamin C in the production and maturation of collagen fibres, in the healing of wounds and in the repair of bone. He himself has shown that if calcium ascorbate is injected into rats it accelerates the healing of holes bored in their femurs; calcium gluconate, a very similar compound, was ineffective. He expresses the opinion that the administration of vitamin C should become a routine in the treatment of any injury.

#### Prevesical Hernia.

H. L. BERSON (*The American Journal of Surgery*, January, 1943) discusses prevesical hernia, which was mentioned in the writings of Astley Cooper, and reports a case of this rare condition. Wervi and Orr, in 1940, found thirty-eight authentic cases in the literature and twenty-three doubtful cases. The supravescical area is a triangular fossa limited laterally and above by the lateral umbilical ligaments (the obliterated hypogastric arteries) and below by the reflection of the peritoneum from the anterior abdominal wall to the fundus of the bladder. The fossa is divided into two parts by the median umbilical ligament. Below the peritoneal reflection and between the bladder and the pubic bone is the prevesical space of Retzius. A hernia through the supravescical area may take any one of several courses, and appear, for example, in the hypogastric or femoral regions. When the extension of the hernial sac takes place downwards into the space of Retzius, a prevesical hernia results. This type is most rare, and being hidden behind the pubic bone it is most difficult to diagnose. In the case reported, a man of forty-two gave a history of several attacks of sharp epigastric and lower abdominal pain, during the last of which he was admitted to hospital. On this occasion nausea but no vomiting was present, and there were no urinary symptoms. Tenderness was present in the lower part of the right side of the abdomen, especially over McBurney's point. There was no mass. Rectal examination revealed no abnormality. Catheterization of the bladder caused severe pain. The pre-operative diagnosis was acute appendicitis. At operation the appendix was found to be retrocaecal but otherwise not obviously abnormal. Through an enlarged incision an opening was discovered in the anterior wall of the peritoneum just above the bladder and between the median and lateral umbilical ligaments. This opening was the mouth of a hernial sac which extended down into the prevesical space, and contained about ten centimetres of strangulated small bowel. The bowel was delivered and found to be viable. The opening of the sac was closed and the patient made an uneventful

recovery. The author states that the diagnosis of this condition has usually been made unexpectedly at laparotomy or necropsy, but considers that whenever the picture of acute intestinal obstruction is accompanied by urinary symptoms, the possibility of a prevesical hernia should be borne in mind. Cystoscopy may reveal a bulge of the anterior bladder wall. A plain X-ray picture of the abdomen may help.

#### Humeral Adaptation of Russell Traction.

D. W. SMITH (*Surgery*, January, 1943) describes a method by which the Hamilton Russell method of traction, originally devised for the treatment of fractures of the femur, may be adapted for use in the management of fractures of the humerus. The author has found that the method is simply applied and maintained, and that it has a great advantage in facilitating changes in the position of the patient for nursing purposes. Traction is applied to the limb preferably by skin adhesion alone or combined with an antecubital sling, but can if desired be exerted by skeletal apparatus.

#### Keloids.

J. GARR AND M. J. STONE (*The American Journal of Surgery*, December, 1942) discuss the subject of keloids and present their experiences with a series of eighty cases. They conclude that most keloids have their origin in trauma, and that in the so-called "spontaneous" keloid the trauma has been so slight as to be overlooked. The authors were unable to trace any aetiological relationship between keloids and syphilis or tuberculosis. In the series reported, the second decade contained the largest group (34%). This fact, together with the frequent association with acne and the rarity of keloids in the aged, was considered to point to a hormonal influence. The literature is reviewed at some length, and the various theories which have been advanced are discussed. X rays and radium were found to be the only effective forms of treatment among the many tried. A few keloids were radio-resistant. Some of the larger keloids required excision with later irradiation. This latter should be withheld until signs of recurrence develop in the scar, as immediate post-operative irradiation was found to have no preventive effect.

#### Lesions of the Ascending Colon.

F. H. LAHEY AND E. SANDERSON (*The Journal of the American Medical Association*, December 26, 1942) discuss lesions of the ascending colon which require right colectomy. Carcinoma of the ascending colon is usually associated with a severe grade of anaemia. The early symptoms of carcinoma in this situation are vague and slight, but even such slight symptoms when associated with a severe anaemia should give rise to a suspicion of malignant disease in this portion of the bowel. Speaking from a very large experience, the authors state that carcinomata of the ascending colon are, as a rule, not palpable through the abdominal wall. They stress the fact that many lesions which at first sight might appear to be inoperable, have involved other structures by contact

extension only and not by true metastatic spread. Such cases are operable, as the structures involved may be removed with the primary tumour. Thus other portions of small bowel, parietal peritoneum and muscles of the abdominal wall, and even portions of the liver which are involved in the growth, may be removed with the growth. The operation used is a modified Mickulicz procedure, with secondary closure of the enterostomy. Before this second stage is performed, one must be certain that the spur has been adequately divided. After division of this spur with a clamp, the lowest part may heal across and the spur be partially reconstituted. Further division is then necessary. Regional ileitis, which usually involves the terminal portion of the ileum, is also, in the opinion of the authors, an indication for right colectomy. The process is apparently an inflammatory condition of unknown cause leading to a thickening of all the coats of the bowel. There is a tendency for perforations to occur, forming local abscesses or leading to fistulous connexions with other viscera. The treatment of this condition involves a consideration of whether: (a) it is to be treated expectantly, and if so, what can be done; (b) it is to be treated surgically in a conservative manner by lateral anastomoses; or (c) it is to be treated by radical removal of the involved ileum and adjacent colon. In a consideration of these points it is to be noted that no known medical measures appear to limit extension of the disease. During medical treatment fistulae may form. Conservative surgery has the same objection. The authors have performed radical surgery in 53 cases. There was only one operative death and that in a case complicated by an abscess and perforation. In two cases there was recurrence of the process in the remaining ileum. But these cases occurred early in the series when a limited resection was performed. This involved leaving behind infected glands in the mesentery, and the authors presume that the unknown infecting agent may have been harboured in these glands and subsequently spread to bowel. At present, a complete right hemicolectomy with removal of glands is performed exactly as for carcinoma of the ascending colon.

#### Lingual Thyroid.

H. WAPSHAW (*The British Journal of Surgery*, October, 1942) reports a case of lingual thyroid. A swelling had been present on the patient's tongue for some thirteen years, but had given rise to no symptoms except slight difficulty in speaking clearly. Recently, the swelling had increased somewhat in size and the dysphonia had become more pronounced. The swelling was explored through a cervical incision, the opportunity being taken to inspect the normal thyroid region. Here, a small nodule of tissue was found which resembled underdeveloped thyroid tissue. The hyoid bone was divided, and the lingual tumour removed completely. It was then cut into fragments which were implanted as free grafts between the infrahyoid muscles. For seven months after operation there were no clinical signs of myxoedema, though at that time the basal metabolic rate was -11%. When the patient was



next seen, eight months after this time, definite clinical myxedema was present with a basal metabolic rate of -30%. Interest lies in the long delay before myxedema appeared, and also in the histological findings. Section of the tumour showed that in some places the boundaries of the tumour tissue were quite irregular and that it penetrated deeply among muscle fibres of the tongue. The tumour was regarded histologically as being neoplastic and locally malignant. The histological picture in lingual thyroid is frequently confusing. There is usually a pseudocapsule, but this is not always complete even in simple cases, and epithelial cells may be found dispersed among the tongue muscles. Many cases which have been regarded as malignant have run a clinical course which suggests that they were not in fact so. However, several cases have been reported which were without doubt examples of malignant disease, confirmed by the finding of secondary deposits in lungs, muscles, pleura and kidneys. All these cases appear to have occurred in middle-aged males, and no confirmed case of malignant disease in a lingual thyroid appears to have been recorded in a female.

#### Goitre Incisions.

On the basis of an experience of 22,000 operations for goitre, F. H. Lahey (*Annals of Surgery*, March, 1943) discusses the making of incisions for these operations. The incision must be well made and well placed in order to obtain good exposure and also in order to obtain a good cosmetic result. Even when these patients have been greatly relieved symptomatically by the operation, the thing which pleases them most is often the fact that they have a good scar. The placing of the patient is important. The lower part of the neck must be thrown forward, and this is best achieved by placing an elevator under the shoulder-blades. Towels should be draped in such a way as not to conceal the general contours of the neck. The incision should be slightly curved upwards and should not be tilted. The site of the incision should not be determined by some rule-of-thumb method, such as taking a level two fingers' breadth above the sternal notch. Each case must be taken individually, and an artistic eye should be brought to bear on the subject. It should be remembered that when the normal position is resumed, the scar tends to lie lower on the neck than it does in the position of extension necessary for the operation. The first incision is made through only the superficial layers of the skin, and then deepened in its central part. The platysma is defined in this part, and a plane of cleavage opened up between the platysma and the prethyroid muscles. This is done with blunt-pointed scissors, and the remaining skin, the fat and the platysma are then divided laterally with the scissors. This avoids injury to the fatty layer and results in less post-operative oedema, and reduces the tendency to scar formation in the fat and consequent dimpling of the skin. The upper flap must be elevated for a considerable distance in order that proper exposure of the upper pole may be possible; in this way control of the superior thyroid vessels is facilitated. The

lower edge of the incision is not dissected back at all. With regard to the question of division of the prethyroid muscles, the author feels that this procedure allows him freer access and thus diminishes the danger of injury to the recurrent laryngeal nerves and the parathyroid glands. The muscles must be divided high up in order not to interfere with their nerve supply and so that the line of suture of the muscles will not lie immediately under the skin suture line with consequent danger of the whole becoming adherent. Drainage is rarely used, but if it is, it should not be through a stab beneath the main wound in the mid-line. Mid-line drainage is liable to lead to adhesion between the trachea and the scar. Drainage should be through the main wound and should be placed laterally, passing either through the sternomastoid muscle or between its anterior border and the prethyroid muscles. Metal clips are used for the skin, alternate clips being removed on the second day, and the rest on the third day. Accurate coaptation of the skin edges is essential. The platysma is not sutured.

#### Pancreatic Cysts.

J. T. CHESTERMAN (*The British Journal of Surgery*, January, 1943) discusses pancreatic cysts and their treatment, and gives details of a personal case. The accepted method of treatment of this condition when excision is not possible has been marsupialization of the cyst. This has frequently led to a chronic sinus which has discharged for years. In addition, there is danger of retroperitoneal sepsis and thrombophlebitis of the inferior vena cava. In 1931, Jurasz first introduced the method of anastomosis of the cyst to the stomach. The cyst has also been anastomosed to the duodenum. The author reports a case in which he performed the anastomosis to the jejunum. The cyst was exposed through the greater omentum, aspirated and joined by a two-inch stoma to the jejunum about two feet from the duodeno-jejunal flexure. A barium meal was given three weeks after the operation, and no barium passed into the cyst from the jejunum. Distortion of the stomach, which had been present prior to operation, gradually disappeared, and twelve months later a barium meal still showed that there was no delay in the jejunum, and that no barium left the jejunal lumen. The patient had remained in good health. The author considers that anastomosis to the jejunum is easier than to other organs, and also has the advantage of providing a more dependent type of drainage.

#### Gangrene after Arterial Contusion.

K. H. PRIDIE (*The Lancet*, February 27, 1943) draws attention to the occurrence of spasmodic contraction of main arterial trunks in association with trauma. Though the continuity of the vessel may be intact, spasm may occur of such a degree as to threaten the vitality of a limb. The author reports a personal case in which such a spasm occurred in association with a severe fracture of the femur, and in which gangrene of the limb actually occurred. Immediately after the accident which resulted in a severe fracture of the upper end of the femur, it was noted

that although pulsation was present in the external iliac artery, no pulsation could be felt in any of the vessels distal to this. This condition persisted for some eleven days, by which time, in spite of treatment, the foot was cold, there was loss of sensation, and the toes were becoming black. Discoloration of the foot was present above the ankle. It was then decided to explore the femoral artery. It was found that about three inches of the upper part of this artery was in a state of spasm, and no pulsation passed through this section. The outer coat of the artery was found to be infiltrated with blood. This coat was dissected from the artery and an injection of procaine made along the artery. Pulsation then returned to the distal segment. However, the vitality of the foot had been severely embarrassed, and later an amputation below the knee was necessary. The author suggests that in all severe fractures, a close watch should be kept on the arteries distal to the site of injury, and if there is absence of pulsation, then an exploration should be performed at an early stage, within six to ten hours. Even at a later stage exploration may be valuable to release the spasm and thereby to allow of amputation at a lower level than might otherwise be necessary.

#### Ultra-Violet Blood Irradiation Therapy.

G. MILEY (*The American Journal of Surgery*, June, 1943) records his experiences in the treatment of acute thrombophlebitis, using ultra-violet rays applied to the blood. The method in short is to take blood from a vein, citrate it and return it to the venous circulation after irradiating it with ultra-violet rays in a special apparatus. The author gives the results in thirteen consecutive cases of the disease. The condition had arisen following various operations, after confinements and secondary to infections. Most cases had failed to respond to such measures as bed-rest, elevation, locally applied heat, sulphonamide drugs and nerve blocks. The results are as follows. Pain disappeared usually within twelve hours. Tenderness along the vein usually disappeared completely in two to six hours after the subsidence of pain. Fever, if present, disappeared within twenty-four to forty-eight hours except when abscess formation had already occurred. Oedema was the last symptom to disappear, and persisted for from twenty-four hours to ten days. Coldness of the extremity disappeared within twenty-four to forty-eight hours. In one patient, a new thrombophlebitis occurred two weeks after an irradiation had cleared up the primary focus. This second focus subsided rapidly after a further irradiation, and no further recurrence took place. The author discusses the known biochemical and physiological effects on the blood of ultra-violet irradiation, and suggests theoretical explanations of the effects which he has produced in the disease under discussion. He also mentions the effect produced by blood irradiation in patients suffering from prolonged paralytic and adynamic ileus. A rapid and consistent restoration of the tone and contractility of intestinal muscle was found to occur. In the patients treated by irradiation, no untoward effects were noted.

## British Medical Association News.

### SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on June 17, 1943, at the Royal North Shore Hospital of Sydney. The meeting took the form of a number of clinical demonstrations by members of the honorary medical staff of the hospital. Parts of this report were published in the issues of September 25, 1943, and October 9, 1943.

#### Paget's Disease with Surgical Complications in the Bones of the Skull.

DR. A. L. CLOWES showed a female patient, aged fifty-six years, who had suffered from Paget's disease since 1935; the condition had been progressing gradually since then. The enlargement of the bones of the skull had blocked the two fronto-nasal ducts and the right auditory meatus, and had prevented drainage of the two frontal sinuses and of the right mastoid process, after each cavity had become infected in turn.

In February, 1940, the patient was first admitted to hospital with a right orbital abscess due to acute frontal sinusitis. Right frontal headache, present for three months, had become worse as the right frontal duct gradually closed, until finally the pus burst into the right orbit. A right external frontal sinus operation was performed, and the right frontal duct was found to be completely closed. The bone was swollen and vascular. The wound was packed and left wide open; it took eleven months to heal.

In February, 1941, the right mastoid process became infected, and closing of the right auditory meatus prevented adequate drainage. A right radical mastoid operation was performed. In March, 1941, the nasal passages became narrow; a submucous resection of the nasal septum was performed.

In November, 1942, a left external frontal sinus operation was performed; the cavity was still in process of becoming filled in.

#### Squamous Epithelioma of One Kidney.

DR. R. J. SILVERTON showed a female patient, aged fifty-eight years, who had suffered from an epithelioma of the left kidney. She had had pain in the left side for six weeks, and blood was seen in the urine on one occasion only a few weeks before she consulted Dr. Silverton on May 22, 1943. She looked anæmic, but felt well. The urine contained blood, pus and *Bacillus coli*. A large, irregular renal mass was felt on the left side. A plain skiagram revealed no abnormality. Excretion urograms revealed a normal right kidney; on the left side, all the upper set, part of the middle set and part of the lower set of calyces were seen to be obliterated; the renal pelvis was also partly obliterated, and had an erosive appearance in the urogram. It was not considered necessary to make a cystoscopic examination *et cetera* for further information, but nephrectomy was embarked upon. At operation, the usual adhesive and hæmorrhagic difficulties in the removal of the expected large hypernephroma of the upper portion of the kidney were not encountered at all; the organ shelled out with the utmost ease. Unusual also was the fact that the organ was "baggy" to the feel, as though it was hollow and partly filled with fluid. No enlarged glands were felt in the region of the pedicle or along the aorta. No solid material was felt in the renal veins. On section, a neoplasm was seen to occupy the upper two-thirds of the organ. Three-quarters of the growth had become necrotic and broken down to form a central cavity, which contained sanguineous fluid and necrotic debris. Dr. Silverton said that the neoplastic tissue itself was a creamy-grey colour, and its homogeneous appearance contrasted with the usual kaleidoscopic appearance of a typical nephroma. Microscopic examination of the neoplasm by Dr. Marjorie Little showed it to be a squamous carcinoma, in which well-formed cell nests had developed. The growth filled the renal pelvis and projected a little into the ureter. The pelvis and ureter were lined with transitional epithelium, which was grossly atypical in structure, and in places metaplastic; the latter condition was probably the origin of the squamous epithelioma. Pyelonephritis was also present in the kidney; urinary infection had been noted earlier. Such chronic infective conditions might lead to squamous carcinoma by metaplasia of the transitional epithelium.

#### Renal Tuberculosis Associated with Spinal and Pulmonary Disease.

DR. SILVERTON also showed a male patient, aged twenty-seven years, with a history of frequency of urination and scalding during the act, of only one month's duration. Blood and pus were found in the urine by his doctor, who thought the condition might be simple cystitis and treated the patient with sulphenamides. No blood had ever been seen macroscopically in the urine, nor had any renal or ureteric pain ever occurred. The urine was turbid, and contained much pus, no red cells, no casts and no tubercle bacilli; it was sterile. Excretion urograms revealed a complete absence of function on the left side and a normal right kidney. Dr. Silverton said that in suspected tuberculosis he always preferred to avoid cystoscopy if possible, for he had seen generalized milary tuberculosis stirred up by that procedure. Rectal examination disclosed many fine nodules in each lobe of the prostate, which was not enlarged or tender. The epididymes were normal. Dr. Silverton said that he decided that the chances were strongly in favour of left renal tuberculosis, and proceeded to perform left nephrectomy without preliminary cystoscopy. In recent years, the custom of avoiding cystoscopy had become almost invariable, mainly because of the remarkable help to diagnosis found in excretion urography. At operation, the external aspect of the kidney was normal; but the ureter told a tale, in that it was dilated and thickened to a moderate degree. The kidney, with the upper half of the ureter, was then removed. Microscopic examination proved that the kidney was tuberculous. Macroscopic examination of sections of the kidney revealed necrotic and shaggy pelvis and calyces, with dilatation of the latter. There were no cavities or tubercles in the renal parenchyma. The patient did well after operation; the wound healed by first intention and the bladder symptoms ameliorated rapidly.

#### Continuous Hæmaturia for Eleven Years without Anæmia.

DR. SILVERTON finally showed a male patient, a tram conductor, aged thirty-five years, who had first noticed hæmorrhage with urination eleven years earlier, quite suddenly; during the long intervening period all his urine (except that passed during a space of two days per year on an average, and that only in very cold weather) had been fairly heavily stained with blood. There was no sign of infection or of nephritis, and the appearances in plain X-ray films and excretion urograms were all normal. The bladder appeared normal on cystoscopic examination, but the posterior part of the urethra was slightly congested. Unfortunately, the cystoscopic examination, carried out in the month of June, 1943, coincided with a period in which the urine was free from blood, and Dr. Silverton was unable to determine whether the blood was coming from the kidneys. He suspected that it was, because the blood was evenly mixed with the whole stream of urine, and not concentrated more at the beginning or the end of the act. However, after the cystoscopic treatment, the patient was free from hæmaturia for four days; then it was present for two days, and since then it had been absent for another seven days. Dr. Silverton said that this was a uniquely clear period during the past eleven years. If he were later to discover cystoscopically that blood was coming from a kidney or from both kidneys, he intended to perform bilateral retrograde pyelography. If a general cause was likely, it might be along the lines of vitamin K or C deficiency. During the past few days the patient had been taking vitamin K by mouth.

#### The Broncho-Pulmonary Segments.

DR. GUY GRIFFITHS demonstrated a diagram of the broncho-pulmonary segments drawn by Colonel J. Hardie Neil, of Auckland. Dr. Griffiths said that the bronchial tree, formed by the division and subdivision of the bronchi, was very complicated and apparently very irregular. The usual text-book description, based on that of Aëby in 1880, was far from perfect and much inferior to that of William Ewart, of 1889. Ewart's had not been accepted, perhaps because he was English, but also because he gave fuller detail than physicians required. Later when bronchoscopists needed more exact knowledge, in search for foreign bodies, abscesses, tumours, bronchial occlusion or bronchiectasis in which surgical treatment was contemplated, they found it very difficult to identify the bronchial branch leading to a particular part of the lung; knowledge of the branch orifices was confused and inadequate. Recently, however, by the work of many investigators, and notably by that of a group led by Colonel James Hardie Neil, of Auckland, Ewart's work had been confirmed, and the lungs had been mapped



out into twelve broncho-pulmonary segments, corresponding with Ewart's twelve "respiratory districts", all smaller than lobes, but, of course, much larger than lobules.

Dr. Griffiths went on to say that Colonel Neil and his colleagues used in their researches not only human anatomy, pathology, skiagraphy and bronchoscopy, but also the comparative anatomy of the pig, dog, cat, monkey, sealion, kangaroo and wombat. They adopted a nomenclature only slightly modified from Ewart's and defined four segments in the upper lobe of the right lung (apical, subapical, axillary and anterior), two in the middle lobe (axillary and anterior), and six in the lower lobe (apical, cardiac, subapical, anterior basal, axillary basal and posterior basal). They had solved the problem of variations in branching, particularly of the subapical branches of the upper lobe, and as the bronchi were named according to their ultimate distribution, the bronchoscopist could now pick out the orifice which led to any segment of either lung.

Dr. Griffiths showed Hardie Neil's drawings, published in THE MEDICAL JOURNAL OF AUSTRALIA and in other medical journals, of the bronchial tree and of the broncho-pulmonary segments, and his perspective drawing of the bronchial orifices as seen in the bronchoscope; he showed also Hardie Neil's hand drawing, of full natural size on transparent "Cellophane", of the lateral aspect of the right lung, which could be adjusted over a lateral skiagram of the right or left lung and used to identify the site of any lesion. When this was done, the perspective drawing of the bronchial orifices enabled the bronchoscopist to select the correct bronchial branch down which to work.

#### Keratosis.

DR. F. C. FLORANCE showed a male patient, aged fourteen years, who on March 11, 1943, complained of a warty rash on the shoulders and neck, which had spread rapidly over the preceding six months. A pathological examination of the lesions was made. Microscopic examination of sections revealed hyperkeratosis and depressions on the surface in which "grains of Darier" or separate swollen degenerated epithelial cells were to be seen. In the deeper layers of the epidermis, "corps ronds" of Darier were also recognizable.

#### Bronchiectasis following Pneumonia.

DR. BRUCE WHITE showed a patient who had suffered from bronchiectasis following pneumonia; it had been restricted to the lower lobe of the left lung. Lobectomy was performed and suction drainage instituted; this brought about rapid diminution of the "dead space" and speedy convalescence.

#### Internal Pneumolysis.

DR. C. G. BAYLISS showed a series of patients who had been subjected to internal pneumolysis for pleural adhesions which impeded collapse therapy.

#### Anæsthetic Demonstration.

DR. C. N. PATON described a method for the administration of "Pentothal Sodium" over prolonged periods. He also demonstrated the Oxford vaporizer number 1 and used it in a surgical case.

#### Radiological Exhibit.

DR. K. F. VICKERY showed a series of X-ray films.

A MEETING of the New South Wales Branch of the British Medical Association was held on May 20, 1943, at the Royal Prince Alfred Hospital. The meeting took the form of a number of clinical demonstrations by members of the honorary medical staff of the hospital. Part of this report appeared in the issue of August 7, 1943.

#### "Antultrin 'S'."

DR. B. DENNING showed two patients to illustrate the treatment of undescended testicles by "Antultrin 'S'". The first, a boy, aged eleven years, had first been examined one month earlier. Both testicles were in the inguinal canal. Treatment was commenced at the rate of two injections per week of 100 units of "Antultrin 'S'", and the testicles came down into the scrotum in three weeks. The second boy was aged five years, and had first been examined eight weeks earlier. The testicles were not even palpable in the inguinal canal. Under treatment with "Antultrin 'S'", 100 units given twice a week, the testicles came down into the scrotum in eight weeks.

Dr. Denning said that in his experience, approximately 30% of patients would respond to treatment with "Antultrin 'S'"; but if they did not respond within two months, he doubted whether further glandular treatment was likely to bring about any improvement.

#### Treatment of Carcinoma of the Lower Part of the Bowel.

Dr. Denning next showed three patients to illustrate the treatment of carcinoma of the lower part of the bowel; the growths were at different levels in each case.

The first of the three patients was a male, who had suffered from hemorrhoids for years, and had been constipated for eight days. He had noticed bright blood in the motions on odd occasions. He had had no diarrhoea, and had lost twelve pounds in weight in four years. He had had no vomiting and no jaundice.

On examination, a large, indurated ulcer was found on the posterior wall of the rectum; it was about two and a half inches in diameter and was apparently fixed to the sacrum. A transverse colostomy was established to divert the flow of bowel contents from over the ulcer. Dr. Denning said that a transverse colostomy was established in preference to a left inguinal colostomy, even though a further operation to close it was required later, because a preliminary inguinal colostomy greatly increased both the technical difficulties of the later resection, and also the risk of sepsis. The rectum was irrigated every day for two weeks. After that length of time, the fixity of the ulcer diminished considerably, and the indurated edges became fairly movable. It then seemed that operative removal was possible, and an abdomino-perineal resection of the rectum was performed. The attachment to the sacrum was by fibrous adhesions only, and the growth seemed to be removed with a reasonable margin of tissue. A terminal colostomy was established in the left loin. Three weeks later the transverse colostomy was closed, and the wound had healed. The patient had gained nearly a stone in weight since his admission to hospital and looked very different from his appearance at that time.

The second of the three patients was a woman, who had been admitted to hospital with acute intestinal obstruction of two days' duration; she gave a history of severe pain in the abdomen, of one month's duration. She had had no previous constipation or diarrhoea. She was operated on as an "emergency". The intestinal obstruction was found to be due to a restricting ring carcinoma at the apex of the sigmoid loop. A transverse colostomy was established, and three weeks later the growth, together with the sigmoid colon and sigmoid mesocolon and glands, was resected and end-to-end anastomosis was formed between the two ends of bowel. Three weeks later the transverse colostomy was closed and the continuity of the bowel was reestablished. Dr. Denning said that at the time of the meeting the patient was able to pass motions normally.

The third patient gave a history of incontinence of faeces and of flatus and diarrhoea of four months' duration. No blood or mucus had been seen in the stools. He had lost two stone in weight in six months. The patient had a constricting carcinoma at the pelvi-rectal junction, about six inches from the anus. A colostomy had been established to dysfunction the affected part of the colon, and in a few weeks time Dr. Denning proposed to perform a resection. Dr. Denning said that the amount of bowel to be removed would vary with the operative findings; but if, as he expected, the bowel could be divided four inches below the growth and still be above the pelvic floor, an abdominal resection only would be performed and the lower portion of the rectum left alone. With regard to the upper portion of the bowel removed, it was possible either to make a permanent terminal colostomy in the left inguinal region, or to leave a greater amount of sigmoid colon and make a terminal colostomy of dysfunctional colon in the wound, with the object of transplanting it six months later in the stump of the rectum, after the method of Devine's telescopic recto-sigmoid anastomosis. By this method the insertion of sutures was impossible, and reliance had to be placed on apposition only of the two segments, and the rectum and colon had to be almost sterile. The colostomy opening with a surrounding collar of skin was isolated, a rubber tube was sutured to the ring of skin, the distal portion of the colon was mobilized and drawn through an opening which was made in the stump of the rectum; this had by that time become completely covered with peritoneum. The closed rectal cavity was widely opened by incision of the sphincter, and the tube was fixed to keep the parts in position. Later, when the parts had firmly united, the transverse colostomy was closed.



### An Unusual Case.

Dr. Denning next showed a male patient, aged twenty-eight years, who had been admitted to hospital with the diagnosis of ruptured duodenal ulcer; he gave a history of sudden, acute pain in the abdomen at 8 o'clock the previous night, which had steadily grown worse ever since. He had previously been treated for a duodenal ulcer, which had been radiologically revealed after a barium meal. After his admission to hospital, his pain and distress had subsided, and by midday the next day, although he had some muscular guarding in the upper part of the abdomen, the lower part of the abdomen was quite relaxed, and it was decided to observe him for the time being. At 11 o'clock that night he was seized with violent pain in the abdomen, board-like rigidity developed and he commenced to vomit.

A laparotomy was performed, with the expectation that a ruptured ulcer would be found. It was found, however, that his duodenal ulcer had healed, but that adhesions had formed between the duodenum and the liver, and through the opening between the two organs and the adhesions a hernia of small bowel had developed which had become strangulated. The hernia in this case had proceeded from left to right, in the opposite direction to what would have been expected from the reported cases of hernia through the foramen of Winslow. When the adhesions were divided, his relief was immediate.

### Probable Lymphosarcoma of the Cervical Glands.

Dr. Denning finally showed a female patient, aged thirty-two years, who had complained of a lump in the neck present for two years and of a change in voice of six months' duration; hearing had been affected for six months and weakness had been present for six months. The lump had first appeared two years earlier, and had increased steadily in size, although the patient stated that on three occasions it had grown slightly smaller. On examination, an oval tumour about two inches in diameter was noticed in the right sub-mandibular region. The skin was freely movable over it, but it seemed fixed to the deeper structures and moved up and down when the patient swallowed. It was not tender and appeared solid in consistency.

Laryngoscopic examination revealed a large tumour pressing on the epiglottis, which was largely taken up and stretched over it. The tumour was seen to be overhanging the larynx, which was almost hidden by it, and the glottis was almost blocked. There was no sign of ulceration or involvement of mucous membrane. The basal metabolic rate was -1%, and X-ray examination of the area revealed no sign of any salivary calculus. An X-ray film of the chest revealed no abnormality.

Dr. Denning said that the most probable diagnosis was a lymphosarcoma of the deep cervical glands. A course of deep X-ray treatment was to be commenced, with close observation for increasing laryngeal blockage, in which case tracheotomy might become necessary.

## Public Health.

### ORANGE SUPPLY AND SCURVY.

The following statement is published at the request of the Nutrition Committee of the National Health and Medical Research Council.

For the past twelve months the Nutrition Committee of the National Health and Medical Research Council has given close and constant attention to the problems surrounding the maintenance of a regular supply of oranges to all parts of the country throughout the year, at a price which would make the oranges available to all sections of the population.

The position now is that the demands of the Australian and Allied Services for orange juice will absorb 25% of the 1943-1944 crop and the remainder will be available to the public at a price which has been fixed by the Prices Commissioner.

In Australia, oranges, or orange juice, have become the principal antiscorbutic for infants and young children. Other sources of vitamin C given to this age group are tomato juice, pawpaw and pineapple juice (especially in Queensland), and blackcurrant juice in Tasmania.

Even in normal years the supply of oranges in most States of the Commonwealth progressively declines from mid-December to the end of April, when the new season's

crop commences to be harvested. It is anticipated that a similar shortage will occur this year.

The committee has explored all ways of ensuring the regular supply of oranges through the months when they are normally in short supply. In addition the possible use of bottled or canned orange juice, both single strength and concentrated, has been investigated. As a result of its work the committee is of the opinion that at present it is not possible to ensure a regular supply of either oranges or orange juice from about the middle of December to the end of April.

However, the committee emphasizes that from the middle of January onward tomatoes are in plentiful supply. Tomato juice is a good source of vitamin C and is frequently better tolerated by infants than orange juice. Attention is drawn to the possible use of alternative sources of vitamin C as antiscorbutics for infants and children.

In Queensland, pawpaw or pawpaw juice, pineapple juice and mango juice are now favoured by some practitioners and infant welfare nurses. In the southern States turnip juice and in Tasmania and in parts of Victoria blackcurrant juice are alternatives for orange juice. The wider use of these foods or their juices, especially during any period when oranges are in short supply, is strongly urged by the committee.

As with all foods, when first given to an infant it is desirable to start with small quantities of these foods if they are used. Commence with a few drops to one teaspoonful, depending upon the age of the infant, and increase by a similar amount each day for a week, thereafter more rapidly, until the child is taking the quantity indicated below.

The Food and Nutrition Board of the National Research Council of the United States of America has issued a scale of "Recommended Dietary Allowances", in which it is recommended that infants be given 30 milligrammes of ascorbic acid daily.

In order to acquire this daily intake it will be necessary for an infant to consume the following quantities of food or juice:

|                                    |          |
|------------------------------------|----------|
| Orange juice                       | 2 ounces |
| Pawpaw                             | 1 ounce  |
| Tomato juice                       | 3 ounces |
| Turnip juice                       | 2 ounces |
| Pineapple juice <sup>1</sup>       | 3 ounces |
| Blackcurrant juice (raw—home-made) | 1 ounce  |
| Rose hip syrup                     | 1 ounce  |

In the southern mainland States, during the interval from the end of the Valencia orange crop in December until the tomatoes are plentiful in mid-January, some families may find it difficult or even impossible to obtain either oranges or tomatoes for infants and young children. Whilst the committee does not in general subscribe to the use of synthetic vitamins instead of those obtained from natural sources, it is of the opinion that synthetic ascorbic acid—in tablet form—offers a means of ensuring an adequate supply of vitamin C for that small fraction of infants whose parents cannot, for financial reasons or by virtue of geographic difficulties or because of a frank shortage, obtain a regular supply of oranges or tomatoes. Therefore, at the instigation of the Nutrition Committee, a supply of synthetic ascorbic acid was purchased by the Commonwealth Government and has been forwarded by the Commonwealth Department of Health to the State Health Departments, who are arranging for its free distribution.

Since scurvy takes some time to develop, the most likely time to find it is after eight months of age, and it usually occurs in infants who have had boiled or pasteurized or dried milk solely.

The committee urges medical practitioners and infant welfare nurses to keep a constant watch for the development of scurvy in infants who are artificially fed—particularly those between eight and fifteen months of age. After twelve months of age the consumption of a mixed diet containing vegetables reduces materially the risk of scurvy.

It should be realized that an appreciable number of infants do not tolerate orange well and reject it when offered; when oranges are expensive or difficult to obtain there is a strong temptation for mothers of some of these infants not to continue to give orange juice. These infants are the potential victims of scurvy.

A history of difficulty in getting infants aged between eight and fifteen months of age to take orange juice

<sup>1</sup> Home-made juice from the rough-skinned variety of pine is richer in vitamin C than either the canned juice or juice from the smooth-skinned types. The rough-skinned types are as a rule cheaper.

warrants further investigation. Marked pallor with a more or less stationary weight curve may be the only signs of incipient scurvy. These signs appear before the tenderness of the limbs and justify medication either with a food or juice rich in vitamin C or ascorbic acid tablets. The latter is to be preferred in these cases.

It should not be forgotten that latent scurvy may be made active by an infection.

As indicated above, the State Health Departments have supplies of synthetic ascorbic acid and have already distributed stocks to the principal infant welfare centres to meet possible emergencies such as those outlined here.

## Correspondence.

### THE POWERS OF THE FEDERAL COUNCIL.

SIR: There seems to be some doubt concerning the extent of the powers under its constitution of the Federal Council of the British Medical Association in Australia. If it does not now possess powers necessary to make decisions that are binding on the Branches, it appears that the Federal Council intends to take steps to acquire those powers. It behoves association members to watch the position closely. At the present time the arrangement is that Federal Council members are elected annually by the Branch councils, not by the members of the Branches. If this arrangement is adhered to, it will mean that the twelve members of the Federal Council, who are elected by something like 150 members comprising the Branch councils, may have the power to make decisions affecting the interests of the whole of the 4,000 or more members of the Branch associations.

Steps should be taken at once to ensure that Federal Council members shall be elected by the members of the several Branches, not by members of the Branch councils only.

Yours, etc.,

D. R. W. COWAN.

163, North Terrace,  
Adelaide,  
September 27, 1943.

### THE MEETING OF THE FEDERAL COUNCIL.

SIR: The latest meeting of the Federal Council is surely one of the most important and useful that has been held, and it is gratifying to note that, at long last, the Council is about to function as its founders so earnestly hoped. Heretofore, it has for the most part been merely the old Federal Committee under a new title.

The appointment of a full-time secretariat is most opportune, and no matter what turn political events take there will be much work to be done.

In the event of the Federal Government's becoming the authority on health matters, Dr. Hunter will doubtless be fully occupied for lengthy periods in Canberra. Should the States remain as at present in charge of health matters, one or other of the Branch Councils will be anxious to call upon Dr. Hunter to assist them in implementing the policy agreed upon by the Federal Council.

It is more fitting for a high official of the Federal Council, rather than Branch members, to appear in the "medico-political arena". It will not be, however, on the perfection of its machinery but on its policy that the Federal Council will be judged by those who elect it.

In connexion with policy, the resolution moved by the Western Australian delegates is of paramount importance, and no section is of greater moment to the rising generation of practitioners than that which concerns the post-war absorption into practice of those serving with the forces. It is heartening to learn that the Council is giving a lead which Dr. Carter has pointed out the profession has been awaiting.

In connexion with detailed plans, there are two matters that do not appear to have received sufficient attention. It was, I think, Sir Farquhar Buzzard who urged that, if they were to do better work, doctors should have more time for its performance. Far too many medical men are in a rush from the time they commence secondary education, through-out undergraduate and resident medical officer days and in practice. The general practitioner, the specialist and the hospital medical officer all have, in many instances, far too much to do in a given time. The problem, of course, is bound up with economics, but, until it is dealt with according

to the scientific methods adopted in relation to industrial fatigue, it will remain a problem.

The second matter that has not been sufficiently stressed is that the medical profession is not likely to be successful in establishing its policy if, without previous consultation and agreement, it makes plans which involve organizations other than its own. There are those among us who think that they are still living in the days of the voluntary system when the doctor counted for far more than at present in plans and policies. Today the State is very interested in health matters, and is responsible for the expenditure of very large sums of money.

In plans that affect the State and profession conjointly, cooperation may be the best method of procedure, and it should be most easily brought about by an appeal to reason. To no class of the profession is this matter of cooperation more important than the returned medical officers, and particularly that section that has to commence civilian practice. They must be placed either in private practice or in some form of institutional practice.

Cooperation is needed, not only in institutional practice, but also in private practice. The most intense individualist will have very much to gain from the benefits of cooperation, even if it means giving something up to his returned soldier colleagues. Institutions may also play their part by seeing to it that, in the conditions of service, objectionable practices of bureaucracy are eliminated.

There is much for the Council and the Association to do if, like the rest of the community, the doctor and his family are to enjoy the freedoms of the Atlantic Charter.

Yours, etc.,

E. S. MEYERS.

639, Sandgate Road,  
Clayfield,  
Queensland.  
October 4, 1943.

### ECLIPSE BLINDNESS.

SIR: I was interested in Dr. Arthur D'Ombra's report of his cases of eclipse blindness and in Sir James Barrett's comments on this subject.

Three days after the recent eclipse I saw four cases of photoretinitis. They came from one family—the mother and her three daughters, all of whom had viewed the eclipse through a pair of tinted welder's goggles. The clinical findings were identical in each patient, and differed somewhat from those described by Dr. D'Ombra. At the macula there was a small, red, more or less circular, punched-out hole. The perimacular area was a deeper red in colour and gave me the impression of being hyperæmic. A central scotoma was present. Corrected vision ranged from  $\frac{2}{20}$  to  $\frac{5}{12}$ . Gradual visual improvement has occurred in each case, and when last seen one girl had recovered to  $\frac{9}{60}$ ; the others could read  $\frac{9}{60}$  but they all had to look to the side of each letter in order to read the smaller lines of the test chart. The maculae have retained the appearance of a small red hole, but the reaction around has subsided.

I venture to differ from Sir James Barrett in regard to the protection afforded by the use of dark glasses. Cases of photoretinitis with permanent scotomata have been reported in service lookouts in spite of this expedient. I do not consider that ordinary tinted lenses offer adequate protection, and I believe that it is unsafe to look at an eclipse except through heavily smoked (that is, sooted) glasses, or some other special protective filter.

Yours, etc.,

E. V. WADDY POCKLEY.

227, Macquarie Street,  
Sydney,  
October 5, 1943.

## Naval, Military and Air Force.

### APPOINTMENTS.

THE following appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 214, of September 30, 1943.

#### NAVAL FORCES OF THE COMMONWEALTH.

*Permanent Naval Forces of the Commonwealth.*  
(Sea-Going Forces.)

*Ante-dating Seniority.*—The seniority of Temporary Surgeon Lieutenant (D) Leo Frank Cotton is ante-dated to 3rd February, 1942.

**Royal Australian Naval Reserve.**

**Grant of Honorary Rank.**—Athol Blaubaum is granted the honorary rank of Surgeon Commander, dated 18th August, 1943.

**ROYAL AUSTRALIAN AIR FORCE.****Citizen Air Force: Medical Branch.**

The following temporary Squadron Leaders are promoted to the temporary rank of Wing Commander with effect from 1st August, 1943: J. D. Russell (261238), O. W. Leitch (281889).

The following Flight Lieutenants are promoted to the temporary rank of Squadron Leader with effect from 1st August, 1943: R. C. Angove (291217), M. Morris (251267), S. P. McR. Yeates (272046), J. F. Hughes (282290), G. B. Morris (262082), L. L. Edwards (262615), J. S. Bothroyd (251461), G. Simpson (252083), A. G. McGlynn (262722), T. W. Vorrath (252760), D. O. Longmuir (253239), E. D. M. Ryan (253343), J. W. L. Price (262118), D. G. Hamilton (263719), C. C. Greenwell (263714), G. Matthews (263561), A. G. R. Uglow (251196), W. R. F. Fox (263900).

**Reserve: Medical Branch.**

The following are appointed to commissions on probation with the rank of Flight Lieutenant with effect from 27th July, 1943: William Michael Carmel Keane, M.B., B.S. (257559), Ronald James Rutherford, M.B., B.S. (267533), Gordon Alfred Levinson, M.B., B.S. (297422).—(Ex. Min. No. 267—Approved 29th September, 1943.)

The following are appointed to commissions on probation with the rank of Flight Lieutenant with effect from the dates indicated: John Edwin Knight, M.B., B.S. (267548), John Robert Saunders, M.B., B.S. (267552) (27th July, 1943), Ian Harold Fulcher Swain, M.B., B.S. (267561), Norman Murchison Kater, M.B., B.S. (267549) (29th July, 1943), John William Gardiner, M.B., B.S. (267561) (17th August, 1943).—(Ex. Min. No. 275—Approved 29th September, 1943.)

**CASUALTIES.**

ACCORDING to the casualty list received on October 7, 1943, Lieutenant-Colonel N. M. Eadie, A.A.M.C., Lower Plenty, Victoria, who was previously reported missing, believed prisoner of war, is now reported to be a prisoner of war.

**Nominations and Elections.**

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

- Swain, Ian Harold Fulcher, M.B., B.S., 1943 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.  
 Bretherton, Kenneth Wilbur, M.B., B.S., 1942 (Univ. Melbourne), 54th Australian Comp. A.A. Regiment, A.I.F., Australia.  
 Goding, Geoffrey Arthur, M.B., B.S., 1940 (Univ. Melbourne), VX104320 Captain G. A. Goding, R.M.O., 47th Australian Infantry Battalion, Australia.  
 Epps, Reginald Glover, M.B., B.S., 1943 (Univ. Sydney), Sydney Hospital, Sydney.  
 Sherin, Betty Mary, M.B., B.S., 1943 (Univ. Sydney), Balmain and District Hospital, Booth Street, Balmain.

**Books Received.**

"Report from Tokyo: A Message to the American People", by Joseph C. Grew, 1943. Sydney and London: Angus and Robertson Limited. 9½" x 7½", pp. 80. Price: 3s. 6d.

"The Epidemiology of Diphtheria during the Last Forty Years", by W. T. Russell; Medical Research Council; 1943. London: His Majesty's Stationery Office. 9½" x 6", pp. 52. Price: 1s. net.

"Food Values in Wartime", by Violet G. Plimmer; Second Revised Edition; 1942. London, New York, Toronto: Longmans, Green and Company; Sydney: Angus and Robertson Limited. 7½" x 4½", pp. 62. Price: 1s. 10d.

"Cookery under Rations", by M. Pearson and M. M. Mitchell; Fourth Impression; 1943. London, New York, Toronto: Longmans, Green and Company; Sydney: Angus and Robertson Limited. 7½" x 4½", pp. 65. Price: 1s. 10d.

"The Abyssinian Campaigns: The Official Story of the Conquest of Italian East Africa"; 1942. London: His Majesty's Stationery Office; Sydney: Angus and Robertson Limited. 9" x 7", pp. 145, with many illustrations. Price: 2s. 9d.

"Outlines of Industrial Medicine, Legislation and Hygiene", by James Burnet, M.A., LL.B. (London), M.D., F.R.C.P.E.; 1943. Bristol: John Wright and Sons Ltd.; London: Simpkin Marshall (1941) Ltd. 7½" x 5½", pp. 92. Price: 7s. 6d.

**Diary for the Month.**

- Oct. 19.—New South Wales Branch, B.M.A.: Ethics Committee.  
 Oct. 20.—Western Australian Branch, B.M.A.: Branch.  
 Oct. 21.—New South Wales Branch, B.M.A.: Clinical Meeting.  
 Oct. 22.—Queensland Branch, B.M.A.: Council.  
 Oct. 26.—New South Wales Branch, B.M.A.: Medical Politics Committee.  
 Oct. 27.—Victorian Branch, B.M.A.: Council.  
 Oct. 28.—New South Wales Branch, B.M.A.: Branch.  
 Nov. 2.—New South Wales Branch, B.M.A.: Organization and Science Committee.  
 Nov. 3.—Victorian Branch, B.M.A.: Branch.  
 Nov. 3.—Western Australian Branch, B.M.A.: Council.  
 Nov. 4.—South Australian Branch, B.M.A.: Council.  
 Nov. 5.—Queensland Branch, B.M.A.: Branch.  
 Nov. 9.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 Nov. 9.—Tasmanian Branch, B.M.A.: Branch.  
 Nov. 12.—Queensland Branch, B.M.A.: Council.  
 Nov. 16.—New South Wales Branch, B.M.A.: Ethics Committee.

**Medical Appointments: Important Notice.**

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

**New South Wales Branch** (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phoenix Mutual Provident Society.

**Victorian Branch** (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

**Queensland Branch** (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, E.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

**South Australian Branch** (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

**Western Australian Branch** (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

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- (a) Physicians (3).
- (b) Assistant Physicians (2).
- (c) Anaesthetist (1).
- (d) Neurologist (1).
- (e) Physician in charge, Psy-  
chiatric and Child Guidance  
Clinic (1).
- (f) Ear, Nose and Throat  
Surgeon (1).
- (g) Assistant, Ear, Nose and  
Throat Surgeon (1).
- (h) Ophthalmic Surgeons (2).
- (i) Assistant Ophthalmic Sur-  
geons (2).
- (j) Orthopaedic Surgeon (1).
- (k) Assistant Orthopaedic Sur-  
geons (2).
- (l) Urologist (1).
- (m) Assistant Urologist (1).
- (n) Radiologist (1).
- (o) Assistant Radiologists (2).
- (p) Assistant Surgeon to Physio-  
therapy Department (1).
- (q) Relieving Assistant Physician  
(1).
- (r) Dental Surgeon to the Cleft  
Palate Department (1).
- (s) Visiting Medical Officer to  
Convalescent Home (1).

Candidates are requested to send  
their applications to the Honorary  
Secretaries of the Conjoint Board  
at the hospital and ten duplicates  
to the University of Sydney before  
noon, Friday, 5th November, 1943,  
and marked outside "Application  
for position of . . ." (as the case  
may be).

Forms of application, which must  
be used, are obtainable at the  
General Office of the hospital.

S. W. G. RATCLIFF,  
Chief Executive Officer and  
Medical Superintendent,  
Royal Alexandra Hospital  
for Children.

W. A. SELLE,  
Registrar, University of  
Sydney, Joint Honorary  
Secretaries.

**ST. VINCENT'S HOSPITAL,  
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Applications, addressed to the  
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One Assistant Physician.  
One Assistant Dermatologist.  
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